

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: J. Varner
Serial No.: 10/573,944
Filed: 04/23/2007
Entitled:

Group No.: 1644
Examiner: Michail A. Belyavskiy
**METHODS FOR ALTERING HEMATOPOIETIC PROGENITOR
CELL ADHESION, DIFFERENTIATION, AND MIGRATION**

**DECLARATION UNDER 37 C.F.R. §1.132
BY DR. DAVID CHERISH**

Mail Box AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Examiner Belyavskiy:

1. I, Dr. David Cheresch, am the subject of the attached *Curriculum Vitae* and author of the publications shown on the list attached thereto. I am Vice Chair for Research, Department of Pathology, UCSD, La Jolla, CA. I am also Professor, Department of Pathology, Moores UCSD Cancer Center, La Jolla, CA, and Director for Translational Research, Moores UCSD Cancer Center. I am married to the inventor, Dr. Judith Varner.
2. I have read and understand the above-identified patent application, and pending claims.
3. I have read and understand Papayannopoulou *et al.* (WO 94/11027).
4. **The claimed invention's target tissue is different from that in Papayannopoulou *et al.***

Papayannopoulou's methods require administering, to **bone marrow tissue**, agents that alter integrin $\alpha 4 \beta 1$'s binding to its ligand. In contrast, the invention's methods exclude bone

marrow endothelial tissue by reciting that the target tissue is “**not bone marrow**” endothelial tissue.

In particular, Papayannopoulou *et al.* discloses methods only for altering integrin $\alpha 4 \beta 1$'s binding to its ligand in **bone marrow**, which is distinguished from the instantly recited “**not bone marrow** endothelial tissue.” In particular, Papayannopoulou *et al.*'s methods relate to administering a blocking agent of integrin $\alpha 4 \beta 1$ to hematopoietic stem cells in bone marrow, thereby effecting their release (*i.e.*, peripheralization) from bone marrow into peripheral blood. In this regard, Papayannopoulou *et al.* explains that

“Applicant believes that administering a blocking agent of VLA-4 antigens on the surface of hematopoietic stem cells and CD34+ cells causes peripheralization of these cells by mediating **release** of the cells from the **marrow** environment via disruption of interactions between VLA-4 and its microenvironmental ligands, such as fibronectin and/or VCAM-1 on stromal cells or in the ECM.”¹

Thus, Papayannopoulou *et al.*'s methods relate to a different tissue (*i.e.*, **bone marrow**) from the instantly recited tissue that is “**not bone marrow** endothelial tissue.”

5. **The claimed invention's “adhesion” and Papayannopoulou *et al.* “peripheralization” are different phenomena**

Based on my understanding of the teachings of the instant Specification, of the prior art, and of Papayannopoulou *et al.*, it is my opinion that Papayannopoulou *et al.* does not disclose the claims' step c) since Papayannopoulou discloses “peripheralization,” which is a different phenomenon from the claimed invention's “adhesion.” This is explained further below.

A. **The meaning of the claimed invention's “adhesion” is understood from the teachings of the Specification and the prior art cited therein**

Pending Claim 1 recites “**adhesion**” between two cell types.

¹ (Emphasis added) Papayannopoulou *et al.*, page 25, lines 1-9.

The instant Specification refers to the teachings of several prior art references in connection with cell-to-cell “**adhesion**” as follows”

“Integrin $\alpha 4 \beta 1$ interactions with fibronectin and/or VCAM are also involved in . . . **adhesion** of immune cell precursors to bone marrow EC and for the homing of these cells back to the bone marrow (Simmons (1992) Blood. 80, 388-395; Papayannopoulou (2001) Blood 98, 2403-2411; Craddock (1997) Blood 90, 4779-4788; and Miyake (1991) J. Cell Biol.114, 557-565).” Specification, page 23, lines 29-36.

“In fact, integrin $\alpha 4 \beta 1$ -VCAM interactions play obligatory roles in facilitating heterotypic cell **adhesion** *in vivo* during embryonic development, (chorion-allantois, endocardium-myocardium, primary myoblast fusions), in immune cell trafficking (extravasation of lymphocytes, monocytes, and eosinophils in inflammation) and in retention of immune cell precursors in the bone marrow (Rosen , Cell. 1992 Jun 26;69(7):1107-19).” Specification, page 68, lines 28-33.

“. . . hematopoietic precursor cells use $\alpha 4 \beta 1$ to **adhere** to bone marrow endothelium (Simmons (1992) Blood. 80, 388-395; Papayannopoulou (2001) Blood 98, 2403-2411; Craddock (1997) Blood 90, 4779-4788; Miyake (1991) J. Cell Biol.114, 557-565).” Specification, page 73, lines 25-28.

From the above teachings of the Specification, and the prior art cited therein, it is my understanding that the claimed invention’s “**adhesion**” refers to the **binding** of an extracellular domain of a membrane protein on one cell type with a second molecule that is on the surface of another cell type.

B. The meaning of Papayannopoulou *et al.*’s “peripheralization”

Papayannopoulou *et al.* discloses that

“peripheralization of hematopoietic stem cells” means “**increasing the number of** hematopoietic stem cells and CD34⁺ cells in peripheral blood”²

“... administering a blocking agent of VLA-4 antigens on the surface of hematopoietic stem cells and CD34⁺ cells causes **peripheralization** of these cells by mediating **release** of the cells from the **marrow** environment via disruption of interactions between VLA-4 and its microenvironmental ligands, such as fibronectin and/or VCAM-1 on stromal cells or in the ECM.”³

From the above, it is my understanding that Papayannopoulou *et al.*’s “peripheralization of hematopoietic stem cells” means “**increasing the number of** hematopoietic stem cells and CD34⁺ cells in peripheral blood”⁴ by **releasing** these cells from bone marrow into peripheral blood.

C. The claimed invention’s “adhesion” and Papayannopoulou *et al.* “peripheralization” are different

Based on the above-discussed teachings of the specification and prior art cited therein (item #5.A.), and on the disclosure of Papayannopoulou *et al.* (item #5.B.), it is my understanding that the claimed invention’s cell-to-cell “**adhesion**” is a **different phenomenon** from Papayannopoulou *et al.*’s “**peripheralization**.” In particular, the recited “adhesion” of HPCs refers to the **binding** of an extracellular domain of its integrin $\alpha 4 \beta 1$ membrane protein with a second molecule that is on the surface of another cell type, which is in contrast to Papayannopoulou *et al.*’s “peripheralization” of HPCs that means **releasing** these cells into the peripheral blood.

6. The claimed invention’s step c) was not necessarily included in the methods of Papayannopoulou *et al.*


Prior to the instantly claimed invention, the prior art was **ignorant** of a role of integrin $\alpha 4 \beta 1$ that is expressed on HPCs in the recited “**adhesion**” of these cells to “target tissue that is

² Papayannopoulou , page 6, lines 26-33.
³ (Emphasis added) Papayannopoulou , page 25, lines 1-9.
⁴ Papayannopoulou , page 6, lines 26-33.

not bone marrow endothelial tissue.” In view of this ignorance, it is my opinion that there is no scientific argument that would logically demonstrate that Papayannopoulou *et al.* actively carried out the recited step of “detecting” the level of a **hitherto unknown phenomenon**, *i.e.*, the recited phenomenon of “adhesion of said hematopoietic progenitor cells to said target tissue that is not bone marrow endothelial tissue.”

7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Dated: 12/07/2011

By: 
Dr. David Cheresch

CURRICULUM VITAE

Name: David A. Cheresch, Ph.D.

Office Address: Moores UCSD Cancer Center
Department of Pathology
3855 Health Sciences Drive, Room 2344
La Jolla, CA, 92093-0803

Office Telephone: (858) 822-2232
FAX: (858) 822-3104
E. Mail: dcheresh@ucsd.edu

Personal: Date of Birth: May 6, 1953
Place of Birth: Detroit, MI

Positions Held:

2006-Present Vice Chair for Research, Department of Pathology, UCSD, La Jolla, CA.
2005-Present Professor, Department of Pathology, Moores UCSD Cancer Center, La Jolla, CA.
Director for Translational Research, Moores UCSD Cancer Center
1996-2005 Professor, Department of Immunology, The Scripps Research Institute
1989-1996 Associate Professor, Department of Immunology, The Scripps Research Institute
1985-1989 Assistant Professor, Department of Immunology, The Scripps Research Institute
1984-1985 Senior Research Associate, Research Institute of Scripps Clinic
1982-1984 Postdoctoral Fellow, Research Institute of Scripps Clinic
1979-1982 Graduate Assistant Instructor, Dept. of Microbiology, University of Miami, Florida
1976-1978 Instructor, Microbiology, Florida International University, Miami, Florida

Education:

1982 Ph.D. Degree, Microbiology/Immunology, "A Mechanism of Immune Hyporesponsiveness in the Metastatic Breast Cancer Patient" University of Miami, Florida
1978 Masters Degree, Microbiology, "Characterization of a Non-productive Infection of HSV-2 in an SV-40 Transformed Hamster Cell" University of Miami, Florida
1975 B.S. Degree, Biology, University of Michigan, Ann Arbor, Michigan

Professional Societies:

American Association for Cancer Research
American Society for Cell Biology
American Association for the Advancement of Science
North American Vascular Biology Organization
American Society for Hematology
Metastasis Research Society

Honors/Awards and Administration:

2011 Organizer, Moores UCSD Cancer Center 7th Annual Translational Oncology Symp., La Jolla, CA
External Scientific Advisory Board member, Program Project the at the University of California Irvine
Keynote Lecture "Induction of the vascular pathological response". Angiogenesis Gordon Research Conference. Salve Regina University, Newport, RI.

- Organizer, 23rd Usha Mahajani Symposium on Molecular Medicine, Salk Institute for Biological Studies, La Jolla, CA.
- Co-Organizer, 6th Annual Frontiers of Clinical Investigation Symposium "Vascular Disease 2011: Bench to Bedside", La Jolla, CA
- Keynote address at the Yale's Vascular Biology and Therapeutics Program retreat, West Haven, CT
- The Russell Ross Memorial Lecturer, American Heart Association Annual Meeting, Orlando, FL.
- 2010 Organizer, 22nd Usha Mahajani Symposium on Molecular Medicine, Salk Inst. La Jolla, CA.
- Keynote Lecture "MicroRNA-132 mediated loss of p120RasGAP activates quiescent endothelium to facilitate pathological angiogenesis". 4th Mayo Clinic Angio Symposium. Mackinac Island, MI
- Invited External Advisory Board member, VIB Vesalius Research Center, Leuven, Belgium
- Organizer, Moores UCSD Cancer Center 6th Annual Translational Oncology Symp., La Jolla, CA
- Presidential Lecture, Weill Cornell Medical College, Ansari Stem Cell Institute, New York, NY
- Recipient, Paget-Ewing award from the Metastasis Research Society and the AACR
- 2009 Recipient, NIH MERIT award, CA50286
- Keynote Lecture "A Role for VEGF as a Negative Regulator of Pericyte Function and Blood Vessel Maturation". Gordon Research Conference, Ventura, CA.
- Organizer, 20th Usha Mahajani Symposium, Salk Institute for Biological Studies, La Jolla, CA.
- 2008 Organizer, BIO Translational Research Forum "Maximizing the Relationship between Academia and the Private Sector, San Diego, CA
- Organizer, 4th Annual Translational Oncology Symposium, Moores UCSD Cancer Center, La Jolla, CA
- Organizer, 3rd Mayo Clinic Angiogenesis Symposium, Rochester, MN. "Targeting Angiogenesis Molecular Pathways"
- 2007 Organizer, Keystone Symposium "Host Cell Interaction and Response to the Cancer Cell", Keystone Resort, CO
- Keynote Lecture "Nanoparticle-mediated targeted drug delivery to the tumor vasculature", Third Annual Meeting of the AANM, UCSD, La Jolla, CA
- Davis Distinguished Lecture "Integrins and Kinases in Neovascularization", Cardiovascular Day 2007, University of Missouri, Columbia, MO
- Featured Speaker, "New Targets and Delivery Systems in Cancer Diagnosis and Treatment", Sidney Kimmel Cancer Center, San Diego, CA.
- Highlight Lecture "Signaling Mechanisms in Angiogenesis", Vasculata 2007. Chapel Hill, NC.
- 2006 Keynote Address, The Lurie Comprehensive Cancer Center, Northwestern University "Vascular Response to Growth Factors and the Extracellular Matrix"
- Elkin Distinguished Lecture, Emory University, Atlanta, GA. "The Role of Integrins in Regulating the Survival of Invasive Cells"
- 2005 Basic Science Lecture Award, American Society of Cytopathology 53rd Annual Scientific Meeting
- 2004 Visiting Professorship, University New Mexico Cancer Center, "Vascular Response to Ischemic Disease and Cancer"
- Cited by the ISI Essential Science Indicators as the fifth most-cited scientist in the field of angiogenesis research over this ten year period.
- 2003 Keynote Address, Cold Spring Harbor Laboratory "Vector Targeting Strategies for Therapeutic Gene Delivery"
- Keynote Address, The Medical University of South Carolina, Hollings Cancer Center Research Symposium, "Modulation of Angiogenesis & Apoptosis in Cancer Therapy"
- The Scripps Foundation for Medicine & Science and The Scripps Research Institute Lecture: Frontiers in Medicine, "Cancer Therapy: Targeted Destruction of Tumor Blood Vessels"
- 2002 Founder of TargeGen, Inc., San Diego, CA.
- Organizer, Keystone Symposium "Cell Biological Response to the Extracellular Matrix"
- Keynote Speaker, Society for Biological Therapy "Understanding Angiogenesis with Molecular Mechanisms"
- 2001 Fellow of the American Heart Association (F.A.H.A.)
- Organizer, Gordon Conference, "Angiogenesis"

- 2000 Chair, AACR Special Conferences in Cancer Research, "Angiogenesis & Cancer"
Organizer, Gordon Conference, "Vascular Cell Biology"
- 1999 Recipient, 75th Anniversary Spirit of Scripps Award
Co-Chair, Gordon Conference, "Angiogenesis and Microcirculation"
- 1998 Director of Scripps/Merck Joint Program on Angiogenesis
National Cancer Institute MERIT AWARD CA50286 - 1998-2006
Brooks, et al. Cell 85:1-20, 1996 chosen as most cited "Hot Paper" by The Scientist in the field of Cell Biology
Presidential Symposium Lecture, American Society of Hematology, Miami, Florida
7th Annual Dennis Woznicki Lecturer in Cardiovascular Pathology, Baylor College of Medicine, Houston, Texas
First Recipient of the Robert Bear Lectureship, St. Michael's Hospital, University of Toronto, Toronto, Ontario, Canada
"Visiting Professor in Oncology," McGill University & The University of Montreal, Montreal, Quebec, Canada
Keynote address, Weinstein Cardiovascular Research Conference, Vanderbilt University, Nashville, TN
- 1997 Organizer, Keystone Symposium, "Angiogenesis & Vascular Remodeling" Steamboat Springs, CO
Myron Karon Memorial Lecturer, Children's Hospital at Los Angeles
XXIII Recipient of the Myron Karon Memorial Lectureship, University of Southern California, Los Angeles, California
15th Hans Lindner Memorial Lecture, Weizmann Institute of Science, Rehovot, Israel
Broadhurst Lecture, Schepens Institute, Harvard Medical School, Boston, MA
Deans Symposium Lecture, Medical College of Georgia, Augusta, GA
Member, Pathobiochemistry Study Section, NIH
- 1996 Robert Flynn Professorship Award, Lecture, Tufts University School of Medicine, Boston, MA, October 31, 1996
Organizer, Keystone Symposium: Integrins and Signaling Events in Cell Biology and Disease, Keystone, CO.
Donald and Darlene Shiley Lectureship, "Starving Tumors," La Jolla, CA
- 1992 Recipient of the American Cancer Society Faculty Research Award, 1992-1997.
- 1990 Cheresch et al. Cell 57:59, 1989 chosen as most cited "Hot Paper" by The Scientist in the field of Cell Biology
- 1988 "Distinguished Visitor" Anti-Cancer Foundation, Australia
- 1985 Recipient of the J. Ernest Ayre Memorial Junior Faculty Award given by the National Cancer Cytology Center

Editorial and Review Boards:

- 2010-Present Vascular Cell, Editorial Board Member
- 2006-2008 Volume Editor on "Integrins" and "Angiogenesis"
- 2002-2005 Cancer Biology & Therapy, Editorial Board Member
- 2001-2006 Alliance for Cancer Gene Therapy, Scientific Advisory Council
- 2001-2004 Hope Heart Institute, Scientific Advisory Board
- 2001-Present Vasculogenix, Scientific Advisory Council
- 2000-2003 Keystone Symposia, Scientific Advisory Board
- 1999-Present Endothelium, Journal of Endothelial Cell Research, Editorial Board
- 1999-Present Expert Reviews in Molecular Medicine, Editorial Board
- 1998-Present Molecular Medicine, Advisory Editorial Board
- 1998-2002 Circulation Research, Editorial Board Member
- 1997-Present Microvascular Research, Associate Editor
- 1997-Present Angiogenesis Research, Associate Editor
- 1997-Present Angiogenesis, Editorial Advisory Board
- 1997-Present Journal of Clinical Investigation, Board of Consulting Editors
- 1997-2001 NIH Pathobiochemistry Study Section
- 1996-Present Navbo Scientific Advisory Board Member
- 1995-1998 National American Heart Association Grant Reviewer

1992-Present Journal of Cell Science, Associate Editor
 1992-Present Cell Adhesion and Communication, Associate Editor
 1992 Volume Editor, "Receptors for the Extracellular Matrix" Biology of the Extracellular Matrix Academic Press.

Invited Lecturer:

- 2011** 1st Annual Collaborative Care Conference: "Targeting integrin $\alpha v \beta 3$ in the treatment of glioblastoma multiforme", San Diego, CA
 Moores UCSD Cancer Center 7th Annual Symposium: "Targeting Raf by allosteric inhibition offers new therapeutic opportunities in oncology", La Jolla, CA
 AACR 2011 Annual Meeting: "microRNA regulation of the tumor angiogenic switch", Orlando, FL
 Oncology Research Seminar Series, Lilly Research Laboratories: "New insights into Raf as a target in oncology", Indianapolis, IN
 ASCO 2011 CME Satellite Symposium: Integrin Inhibitors in Glioblastoma & Solid Tumors: "The cilengitide story from discovery to the clinic and back", Chicago, IL
 Angiogenesis Gordon Research Conference, Salve Regina University: "Induction of the vascular pathological response"-Keynote Lecture, , Newport, RI
 Yale's Vascular Biology and Therapeutics Program Retreat: "av integrins and CRAF regulation of angiogenesis"-Keynote Lecture, West Haven, CT
 NAVBO workshop on Signaling in Cardiovascular Development: "MicroRNA-mediated regulation of the angiogenic switch", Cape Cod, MA
 AHA Annual Meeting: "Induction of the vascular pathological response"-The Russell Ross Memorial Lecture, Orlando, FL
- 2010** Research seminar in the Department of Pharmacology: "MicroRNA-132 mediated loss of p120Ras GAP activates quiescent endothelium to facilitate pathological angiogenesis", University of Illinois, Chicago, IL
 The Banbury Center, Cold Spring Harbor Laboratory Meeting: "MicroRNA-132 mediated loss of p120RasGAP activates quiescent endothelium to facilitate pathological angiogenesis", New York
 Frontiers in Cardiovascular Science Seminar Series: "MicroRNA-132 mediated loss of p120RasGAP activates quiescent endothelium to facilitate pathological angiogenesis", University of Michigan, Ann Arbor, MI
 16th Int'l Vascular Biology Meeting: "MicroRNA-132 mediated loss of p120RasGAP activates quiescent endothelium to facilitate pathological angiogenesis", UCSL, Los Angeles, CA
 Gordon Research Conference: "Vascular growth factor biology in the context of therapy", University of New England, Biddeford, ME
 The 16th Meeting on Protein Phosphorylation and Cell Signaling: "Allosteric Inhibitors of Raf Suppress Tumor Growth by Preventing Raf Dimerization", Salk Research Institute, La Jolla, CA
 Research seminar, Department of Oncological Sciences: "Unexpected role of Raf in tumor cell mitosis revealed by an allosteric inhibitor", Mount Sinai SOM, New York, NY
 Distinguished Seminar Series, Herbert Irving Comprehensive Cancer Center: "Unexpected role of Raf in tumor cell mitosis revealed by an allosteric inhibitor", Columbia University, New York, NY
- 2009** Keystone symposium: "A Role for VEGF as a Negative Regulator of Pericyte Function and Blood Vessel Maturation", Big Sky, MT
 2009 ASCO-Gastrointestinal Cancer Symposium: "A Role for VEGF as a Negative Regulator of Pericyte Function and Blood Vessel Maturation", San Francisco, CA
 University of California Irvine Scientific Seminar Series: "Unexpected role of VEGF in the tumor microenvironment: New insights into cancer therapy", Irvine, CA
 AACR 100th Annual Meeting: "A Role for VEGF as a Negative Regulator of Pericyte Function and Vessel Maturation: Important Implications for Cancer Therapy", Denver, CO
 Int'l Conference of the American Thoracic Society: "Endothelial cell survival signals from the tumor microenvironment", San Diego, CA

- Gordon Research Conference on Angiogenesis: "VEGF actions on pericyte function", Salve Regina University, Newport, RI
- The 2nd Int'l Kloster Seoon Meeting: "miR-132 acts as an angiogenic switch by suppressing endothelial 120RasGAP", Kloster Seoon, Germany
- The 4th Annual NCI Alliance for nanotechnology in Cancer Investigators' Meeting: "Neovascular Targeted Lipid-Coated Nanogels as Versatile Drug Carriers", Manhattan Beach, CA
- 2008** Keystone symposium: "Disruption of B-RAF/C-RAF Dimerization Blocks, Angiogenesis and Tumor Growth", Vancouver, CA
- 10th Int'l Symposium on Anti-angiogenic Agents: "A Chemical/Biology Approach to Develop New Anti-angiogenic Agents", La Jolla, CA
- International workshop: "Developing a New Class of Tyrosine Kinase Inhibitors to Target Cancer and Angiogenesis", Kyoto, Japan
- The UCSD Hematology/Oncology Conference "Targeting Rf in the Tumor Vasculature", La Jolla, CA
- Keystone symposium: "Raf Kinase as Target for Tumor Growth and Angiogenesis", Snowbird, UT
- ESH 8th Int'l Euroconference on Angiogenesis: "Targeting Raf in the tumor endothelium", Paris, FR
- Salk Research Institute Mini-Symposium on Targeted Therapeutics in Cancer: "New Strategy for Targeting Kinases in Tumors and Neovasculture", La Jolla, CA
- NAVBO Workshop: "Role of Raf in Vascular Development and Angiogenesis", Cape Cod, MA
- The Cell & Molecular Physiology Series Seminar: "A Role for VEGF as a Negative Regulator of Pericyte Function and Blood Vessel Maturation" University of North Carolina, Chapel Hill, NC
- 3rd Mayo Clinic Angiogenesis Symp: "Targeting Angiogenesis Molecular Pathways", Rochester, MN
- iSBT Annual Meeting: "Anti-angiogenic Therapies", San Diego, CA
- 2007** Roswell Park Cancer Institute: "Targeting the Tumor Blood Vessels", Buffalo, NY
- Duke University: "Targeting Raf Kinase in the Angiogenic Endothelium", Durham, NC
- AACR 98th Annual Mtg: "Metastasis Regulation by Caspase/Integrin Cooperation", Los Angeles, CA
- 2nd International Symposium on Cancer Metastasis and the Lymphovascular System: "Role of the Tumor Microenvironment on Tumor Cell Survival and Metastasis", San Francisco, CA
- 2007 NSTI/NCI Symposium: "Nanotechnology for Cancer Prevention, Diagnosis and Treatment", Santa Clara, CA
- University of Michigan School of Medicine, "Molecular Signals in Angiogenesis", Ann Arbor, MI
- Van Andel Research Inst: "Signaling Mechanism in Angiogenesis and Metastasis", Grand Rapids, MI
- Univ of Texas MD Anderson Cancer Ctr: "Molecular Targets in Tumor Angiogenesis", Houston, TX
- 6th Annual Int'l Congress on the Future of Breast Cancer: "Attacking the Metastatic Cascade", Kohala Coast, HI
- Keystone Symp: "Integrin Roles in Tumor Angiogenesis and Lymphangiogenesis", Keystone, CO
- UCSD Physiology Seminar: "Signaling Pathways in Angiogenesis: Role of Raf Kinase in the Patterning of New Blood Vessels", San Diego, CA
- 2007 IRACDA National Conference: "Entrepreneurial Science", San Diego, CA
- RAI Seminar Series: "Signaling Mechanisms in Angiogenesis", La Jolla, CA
- University of Chicago Biomedical Sciences Cluster Seminar Series: "Raf Kinase in Endothelial Cell Survival and Angiogenesis", Chicago, IL
- Burnham Institute for Medical Research Cancer Center Series. "A Chemical/Biology Approach to Develop New Anti-angiogenic Agents", La Jolla, CA
- 2006** 8th International Symposium on Anti-Angiogenic Agents, La Jolla, CA, "Vascular Signaling Mechanisms in the Tumor Endothelium"
- Scientific Writers Conference, Moores UCSD Cancer Center, La Jolla, CA, "Angiogenesis: Is blocking the Flow of Blood to Tumors a Good Way to Fight Cancer?"
- Angiogenesis Research & Therapeutics Conference, Old Town, San Diego, CA, "Selective Blockade of the Permeability-Inducing Effects of VEGF during Ischemic Disease and Macular Edema"
- WCSDB 2006 Regional Meeting, Asilomar Conference Center, Pacific Grove, CA.
- University of Utah Medical Seminar Series, Salt Lake City, "Therapeutic Targeting of the Tumor Vasculature"
- AACR 97th Annual Meeting, Washington, DC, "Therapeutic Implications of Integrin-Mediated Signals in the Tumor Vascular Compartment"

NHLBI US-INSERM Symposium on Angiogenesis, Cellular & Gene Therapy, Denver, CO, "Role of VEGF and the Vascular Barrier Function in Disease"

Society for Nuclear Medicine Categorical Seminar, San Diego, CA, "Molecular Basis of Angiogenesis"

Keynote Address, Angiogenesis Symposium, The Lurie Comprehensive Cancer Center, Northwestern University "Vascular Response to Growth Factors and the Extracellular Matrix"

Elkin Distinguished Lecture, Emory University, "Cell Survival, a Critical Determinant in Metastatic Disease and Angiogenesis"

5th International Congress on Targeted Therapies in Oncology, "Targeting Integrins"

18th Annual Usha Mahajani Symposium, Salk Institute, "Regulation of Metastatic Disease by Cell Adhesion Receptor Signaling"

Plenary Speaker, International Society for Oncodevelopmental Biology and Medicine, Pasadena, CA, "Vascular Response to Growth Factors and the Extracellular Matrix"

UCSF Biomedical Seminar Series, San Francisco, CA, "Cell Survival, a Critical Determinant in Metastatic Disease and Angiogenesis"

National Cancer Institute, Nanotechnology Alliance Investigators Meeting, San Diego, CA, "Targeting nanoparticles to the Tumor Endothelium"

Academic Pathology Chairs & Administrator's Meeting, Coronado, CA, "Translational Research in Pathology"

Mayo Clinic Angiogenesis Symposium, Rochester, MN, "Role of Raf Kinase in Endothelial Cell Survival and Angiogenesis"

National Cancer Institute Board of Scientific Advisors, Bethesda, MD, "Selective Ablation of Metastatic Disease by Nanoparticle-targeted Drug Delivery to the Neovasculature"

Fine Particle Society 2006 International Conference on Bio and Pharmaceutical Science and Technology, San Diego, CA, "Nanoparticle-mediated Drug Delivery to the Tumor vasculature Disrupts Metastatic Disease"

2005 Cell Migration & Adhesion Symposium, University of North Carolina at Chapel Hill, "Disease Implications of Integrin Regulation of Angiogenesis"

Gordon Research Conference, Ventura, CA, "Physiological Consequences of Vascular Cell Adhesion Mechanisms"

Miami Nature Biotechnology Winter Symposium University of Miami, "Growth Factor Signaling in the Tumor Endothelium"

7th International Symposium on Anti-Angiogenic Agents, Hyatt Regency La Jolla, "Unexpected Role of VEGF in Ischemic Disease and Cancer"

Sidney Kimmel Cancer Center Gene Therapy Conference, Hotel Del Coronado, "Targeting Vascular Cell Signaling Pathways in Tumors"

UC Davis Cancer Research Seminar Series, Sacramento, CA. "Vascular Events in Cancer & Ischemic Disease"

13th International AEK/AIO Cancer Congress of the German Cancer Society, Wurzburg, Germany, "Unexpected Role of VEGF in Tumor Cell Invasion & Metastasis"

Keystone Symposium, Steamboat Springs, Colorado, "Integrins in Cell Invasion & Migration"

American Thoracic Society, San Diego, "Apoptotic Cues from the ECM: Regulators of Angiogenesis"

Gordon Research Conference, Newport, Rhode Island, "Vascular Response to Growth Factors and the Extracellular Environment"

Moore's UCSD Cancer Center La Jolla, CA, "Anti-Angiogenesis: Attacking the Cancer Blood Supply"

Translational Research Conference, La Jolla, CA, "Therapeutic Targeting of the Tumor Vascular Compartment"

Molecular Pathology Graduate Program, La Jolla, CA, "Integrin Signaling in Health and Disease"

Loyola University Medical Center, Chicago, IL, "Vascular Response to Ischemic Disease and Cancer"

Borrego Springs Retreat, Borrego Springs, CA, "Tumor Microenvironment & Metastasis"

Molecular Biology Program, La Jolla, CA, "Integrin Signaling in Health and Disease"

1st Moore's UCSD Cancer Center Symposium, La Jolla, CA, "New Targets in Oncology"

CME for Physicians, Moore's UCSD Cancer Center, "Targeting the Tumor Vasculature for Imaging and Treatment of Cancer"

- Molecular Pharmacology & Chemistry Seminar Series, Sloan-Kettering Institute, "VEGF Activation of Blood Vessels and its Pathophysiological Consequences"
- 1st Annual Mellon Institute Symposium, University of Virginia, Charlottesville, VA, "Targeting Endothelial Cell Signaling Pathways in Disease"
- 11th Annual Penn State Cancer Center Symposium, Hershey, PA, "Growth Factor & Extracellular Matrix Signals Regulating Tumor Angiogenesis and Metastasis"
- TargetGen Scientific Advisory, La Jolla, CA, "Recent Developments in the Pathophysiological Effects of VEGF-Induced Vascular Permeability"
- 53rd American Society of Cytopathology, San Diego, CA, "Vascular Response to Ischemic Disease and Cancer"
- AACR Special Conference in Cancer Research, Boston, MA, "Unexpected Role of VEGF in Tumor Cell Invasion and Metastasis"
- Yale University 2005/2006 Seminars, New Haven, CT, "Regulation of Tumor Angiogenesis and Metastasis by Growth Factor and Extracellular Matrix Signals"
- 2004** Dartmouth Life Sciences Symposium, Unexpected Role of VEGF in Ischemic Disease & Cancer, Hanover, NH
- Memorial Sloan-Kettering Cancer Center, Biological Consequences of Signaling in the Vascular Compartment, New York, NY
- Biofunding Summit, Limiting Ischemic Damage Through Control of Vascular Permeability, LaJolla, CA
- Genentech Seminar Series, Unexpected Role of VEGF in Cardiovascular Disease & Cancer, S. San Francisco, CA
- Keynote Speaker, DOBI Medical International, What is going on in Cancer/Angiogenesis Research, Mahwah, New Jersey
- International Congress of Histochemistry & Cytochemistry, Signaling Pathways in Tumor Angiogenesis & Metastatic Disease, LaJolla, CA
- Gordon Research Conference, Signal Transduction by Engineered Extracellular Matrices, Lewiston, ME
- Trans-Institute Angiogenesis Workshop, Towson, Maryland
- Memorial Sloan-Kettering Cancer Center, Signaling Events in Vascular Remodeling & Angiogenesis, New York, NY
- Fifth Annual Conference, Arteriosclerosis, Thrombosis & Vascular Biology, San Francisco, CA
- Experimental Biology Symposium, Biological Applications of Nanotechnology, Washington, DC
- Rockefeller University, Unexpected Role of VEGF in Cardiovascular Disease & Cancer, New York, NY
- The Burnham Institute, Signalling Events in Vascular Remodeling & Angiogenesis, LaJolla, CA
- Sixth International Symposium on Anti-Angiogenic Agents, LaJolla, CA
- Keystone Symposium, Angiogenesis- Novel Basic Science Insights and Human Therapy, Santa Fe, NM
- UNM CRTC Visiting Professorship, Signalling Events in Vascular Remodeling and Angiogenesis
- 2003** American Society of Hematology, 45th Annual Meeting, San Diego, CA.
- Fourth International Conference on Systems Biology, Washington University, St. Louis, MO.
- Chiron Corporation, "Targeted Molecular Therapy for Vascular Disease", San Francisco, CA.
- American Association for Cancer Research, "Advances in Breast Cancer Research: Genetics, Biology & Clinical Implications", Huntington Beach, CA.
- University of Miami, "Role of the Endothelial Cell Src Kinase in Myocardial Infarction", Miami, FL.
- Fifteenth Annual Mahajani Symposium, "Animal Models & Imaging: Recent Advances in Cancer Research, La Jolla, CA.
- GTCBio Conference, "Cardiovascular Drug Discovery & Development", San Diego, CA.
- Norris Comprehensive Cancer Center, "Therapeutic Targeting of the Tumor Vasculature", Los Angeles, CA
- Gordon Research Conference, Angiogenesis & Microcirculation, Newport, RI.
- American Association for Cancer Research, 94th Annual Meeting, Washington, D.C.
- Gordon Research Conference, Atherosclerosis, Meriden, New Hampshire
- American Heart Association, Arteriosclerosis, Thrombosis, and Vascular Biology, Washington, D.C.
- Duke University Medical Center, Brain Tumor Seminar Series, Durham, North Carolina
- The University of North Carolina, Seminar Series, Chapel Hill, NC.

- Experimental Biology/NAVBO/ASIP Annual Meeting, San Diego, CA.
 The Scripps Foundation for Medicine & Science and The Scripps Research Institute Lecture: Frontiers in Medicine, "Cancer Therapy: Targeted Destruction of Tumor Blood Vessels"
 Cold Spring Harbor Laboratories, "Vector Targeting Strategies for Therapeutic Gene Delivery"
 The University of Texas MD Anderson Cancer Center, 44th Annual Clinical Conference: Molecular Therapeutics for Cancer Metastasis, Houston, TX.
 University of California at San Diego, Cancer Center Lecture Series, San Diego, CA.
 The Scripps Cancer Center Scientific Retreat, "Therapeutic Targeting of Tumor Blood Cells"
 The Medical University of South Carolina, Hollings Cancer Center Research Symposium, "Modulation of Angiogenesis & Apoptosis in Cancer Therapy", Charleston, NC.
 University of Miami School of Medicine, Seminar Program, Miami, FL.
 The Children's Hospital, Symposium in Honor of Dr. Judah Folkman, Boston, MA.
 University of California at Los Angeles, Vascular Biology Seminar Series, Los Angeles, CA.
 Keystone Symposium, Molecular Mechanisms of Apoptosis (B6), Banff, Canada
 The Center for Biomedical Continuing Education, 5th International Symposium on Anti-Angiogenic Agents, La Jolla, CA
 Gordon Research Conference, Vascular Cell Biology, Ventura, CA.
 The Center for Biomedical Continuing Education, 3rd Annual Opinion Leader Summit: "Targeted Therapies for the Treatment of Lung Cancer", Aspen, CO.
- 2002** Sidney Kimmel Cancer Center, 11th International Conference on Gene Therapy, San Diego, CA
 The Knowledge Foundation, Gene Delivery – Non-viral Systems & in vivo Applications, San Diego, CA
 The American Society for Cell Biology, 42nd Annual Meeting, San Francisco, CA
 University of California San Diego, Cardiovascular Science Conference, San Diego, CA
 The Center for Biomedical Continuing Education, 4th International Symposium on Anti-Angiogenic Agents, Dallas, TX
 Keystone Symposia on Biological Response to the Extracellular Matrix, Banff, Canada
 Keystone Symposia on Protein Phosphorylation & Mechanisms of Cellular Regulation, Taos, NM
 St. Jude Children's Hospital, Education Program, Memphis, TN
 Cold Spring Harbor Laboratories, 67th Symposium on Quantitative Biology "The Cardiovascular System", Cold Spring Harbor, NY
 University of Texas, Pharmacology Seminar Series, Dallas, TX
 Gordon Research Conference, Signaling by Adhesion Receptors, New London, CT
 Breast Cancer International Research Group, 3rd International Conference, Anaheim, CA
 The Center for Biomedical Continuing Education, 1st Annual Symposium on Anti-Receptor Signaling in Human Neoplasia, Chicago, IL
 Society for Biological Therapy, Angiogenesis Workshop, San Diego, CA
 American Society for Matrix Biology Conference, Houston, TX
 American Society for Cell Biology Symposium Lecture, 42nd Annual Mtg., San Francisco, CA
- 2001** Gordon Research Conference, Fibronectin, Integrins and Related Molecules, Ventura, CA
 Keystone Symposium, Cell Migration and Invasion, Tahoe City, CA
 Stanford University School of Medicine, Stanford, CA
 SUNY Stony Brook, School of Medicine, Scholars in Cancer Research, Stony Brook, NY
 University of Wisconsin, Frontiers in Pharmacology, Madison, WI
 Keystone Symposia on Molecular & Cellular Biology, Keystone, CO
- 2000** Keystone Symposia on Molecular & Cellular Biology, Joint Regulation of Signaling Pathways by Integrins & Growth Factors, Breckenridge, CO
 Gordon Research Conference, Signaling by Adhesion Receptors, Newport, RI
 Chair, Gordon Research Conference, Vascular Cell Biology, Plymouth, NH
 Keystone Symposia on The Dynamics of the Cytoskeleton/Intercellular Junctions, Keystone, CO.
 Biomedical Sciences Seminar Series, UCSF, San Francisco, CA
 Keystone Symposia on Experimental & Clinical Regulation of Angiogenesis, Salt Lake City, Utah
 Experimental Biology Meeting (FASEB), Signal Transduction & Angiogenesis, San Diego, CA
 John Wayne Cancer Institute Seminar, Santa Monica, CA
 UCSD/Salk Institute Mahajani Symposium, La Jolla CA
 Georgetown University Medical Center, Oncology Grand Rounds, Washington, D.C.
 AACR Special Conference on Angiogenesis, Traverse City, MI
 Angiogenesis Seminar, The Wistar Institute, Philadelphia, PA

- American Heart Association, Council on Arteriosclerosis, Thrombosis and Vascular Biology, New Orleans, LA
- 1999 UIC, Gynecologic Oncology Group Symposium, Nashville, TN
 1st International Symposium on Anti-Angiogenic Agents, Irving, TX
 The Gynecological Oncology Research Group Lecture Series, Boston, MA
 Beth Israel Deaconess Medical Center, Boston, MA
 IBC's 5th Annual Conference on Angiogenesis, Boston, MA
 Keynote Speaker, Robert Wood Johnson Medical School, 1st Annual Research Day, New Brunswick, NJ
 Vascular Biology, Matrix Remodeling in Angiogenesis, Washington, DC
 University of North Carolina Lineberger Comprehensive Cancer Center, Chapel Hill, NC
 Gordon Research Conference, Molecular Cell Biology, Tilton, NH
 ISHR, Cardiovascular Research in the new Millennium - XXI Century, XXI Annual Scientific Sessions, San Diego, CA
 National Cancer Institute, Third National AIDS Malignancy Conference, Bethesda, MD
 Gordon Research Conference, Cell Contact and Adhesion, Proctor Academy, NH
 Gordon Research Conference, Angiogenesis & Microcirculation, Salve Regina University, Newport, RI
 Georgetown University Medical Center, Oncology Grand Rounds, Washington, DC
 Ludwig Institute for Cancer Research, Salk Institute, Cancer on the Eve of the Millennium: Diagnostics, Therapy & Prevention, San Diego, CA
 AACR Special Conference, Molecular Aspects of Metastasis, Snowmass, CO
 Horizons in Vascular Biology & Therapeutics, Miami, FL
- 1998 Keystone Symposia Conference, Wound Repair, Copper Mountain, CO
 AACR Special Conference, Angiogenesis and Cancer, Orlando, FL
 Keystone Symposia Conference, Motility and Metastasis, Copper Mountain, CO
 Keystone Symposia Conference, Endothelium, Lake Tahoe, NV
 Keystone Symposia Conference, Molecular Biology of the Cardiovascular System, Steamboat Springs, CO
 Keystone Symposia Conference, Angiogenesis and Vascular Remodeling, Steamboat Springs, CO
 2nd International Symposium, Science and Medicine, Vascular Protection: From Basic Science to the Clinic, Los Angeles, CA
 BACR/IACR Joint Annual Scientific Meeting, Dublin, Ireland
 Brazilian Symposium on Extracellular Matrix, Rio de Janeiro, Brazil
 VII International Congress of the Metastasis Research Society, San Diego, CA
 1st Annual Robert Bear Lectureship, Toronto, Ontario, Canada
 Schering Foundation Workshop, Therapeutic Angiogenesis: From Basic Science to the Clinic, San Francisco, CA
 Annual Meeting of the American Society of Hematology, Miami Beach, FL
 Science & Medicine Second International Symposium, Vascular Protection: From Basic Science to the Clinic, Los Angeles, CA

Patents:

- 7.833.976 Methods for treatment of tumors and metastases using a combination of anti-angiogenic and immune therapies. 11/16/2010
- 7.803.399 Delivery system for nucleic acids. 09/28/2010
- 7.595.051 Methods of treating neovascular glaucoma, macular degeneration and capillary proliferation with alphavbeta3-specific antibodies. 09/29/2009
- 7.585.841 Methods and compositions useful for modulation of angiogenesis using tyrosine kinase Src. 09/08/2009
- 7.482.007 Methods for inhibiting angiogenesis to treat cancer with alphavbeta3-specific antibodies. 01/27/2009
- 7.368.478 Methods for inhibiting angiogenesis and tumor growth. 05/06/2008
- 7.365.054 Methods for treatment of tumors and metastases using a combination of anti-angiogenic and immune therapies. 04/29/2008

- 7.354.586 Methods of treating arthritis and diabetic retinopathy with .alpha sub.v.beta sub.3-specific antibodies. 04/08/2008
- 7.329.406 Methods of treating psoriasis with .alpha sub.v.beta sub.3-specific antibodies. 02/12/2008
- 7.125.849 Peptide-based angiogenesis inhibitors and methods of use thereof. 10/24/2006
- 7.115.660 Methods for inhibiting angiogenesis and tumor growth. 10/03/2006
- 7.115.261 Methods for treatment of tumors and metastases using a combination of anti-angiogenic and immune therapies. 10/03/2006
- 7.053.041 Methods and compositions useful for inhibition of .alpha..sub.v.beta..sub.5mediated angiogenesis. 05/03/2006
- 7.025987 Delivery system for nucleic acids. 04/11/2006
- 6.887.473 Inhibition of angiogenesis in disease states with an anti-alpha.v.beta.3 monoclonal antibody. 05/03/2005
- 6.803.383 Inhibition of angiogenesis and tumor growth. 10/12/2004
- 6.685.938 Methods and compositions useful for modulation of angiogenesis and vascular permeability using SRC or Yes tyrosine kinases. 02/03/2004
- 6.500.924 Methods and compositions useful for inhibition of angiogenesis. 12/31/2002
- 5.866.540 Cyclic adhesion inhibitors. 02/02/1999
- 5.766.591 Methods and compositions useful for inhibition of angiogenesis. 06/16/1998
- 5.753.230 Methods and compositions useful for inhibition of angiogenesis. 05/19/1998

Bibliography:

1. Distasio, J.A., Cheresh, D.A., Schilder, R.J., Vogel, C.L., Silverman, M.A. and Lopez, D.M. Maximizing differences in the concanavalin A-induced blastogenic response of lymphocytes from breast cancer patients and controls by the use of a-methyl-D-mannoside. *J. Natl. Cancer Institute* 68:69-74, 1982.
2. Cheresh, D.A., Distasio, J.A., Vogel, C.L. and Lopez, D.M. Mitogen-induced blastogenesis and receptor mobility inhibition by breast cancer serum with elevated orosomucoid (a1-acid glycoprotein) levels. *J. Natl. Cancer Institute* 68:779-783, 1982.
3. Cheresh, D.A. and Haines, H. Blocked herpes simplex virus type 2 specific DNA synthesis in a simian virus 40-transformed hamster cell permissive for herpes simplex virus type 1. *Infection and Immunity* 41(2):584-590, 1983.
4. Cheresh, D.A., Haynes, D. and Distasio, J.A. Interaction of an acute phase reactant, a1-acid glycoprotein (orosomucoid), with the lymphoid cell surface: a model for non-specific immune suppression. *Immunology* 51:541-548, 1984.
5. Cheresh, D.A., Varki, A.P., Varki, N.M., Stallcup, W.B., Levine, J. and Reisfeld, R.A. A monoclonal antibody recognizes an O-acylated sialic acid in a human melanoma-associated ganglioside. *J. Biol. Chem.* 259(12):7453-7459, 1984.
6. Cheresh, D.A., Reisfeld, R.A. and Varki, A.P. O-acetylation of disialoganglioside GD3 by human melanoma cells creates a unique antigenic determinant. *Science* 225:844-846, 1984.
7. Cheresh, D.A., Harper, J.R., Schulz, G. and Reisfeld, R.A. Localization of the ganglioside GD2 and GD3 in adhesion plaques and on the surface of human melanoma cells. *Proc. Natl. Acad. Sci. USA* 81:5767-5771, 1984.
8. Schulz, G., Cheresh, D.A., Varki, N.M., Yu, A., Staffileno, L.K. and Reisfeld, R.A. Detection of Ganglioside GD2 in tumor tissues and sera of neuroblastoma patients. *Cancer Res.* 44:5914-5920, 1984.

9. Reisfeld, R.A., Cheresch, D.A., Schulz, G., Harper, J.R. and Quaranta, V. Biochemical and functional profiles of two unique melanoma associated antigens. *In: Immunity to Cancer* Mitchell, M.S. (Ed.):69-84, 1985.
10. Reisfeld, R.A., Schulz, G. and Cheresch, D.A. Approaches for immunotherapy of malignant melanoma with monoclonal antibodies. *In: Monoclonal Antibodies and Cancer Therapy*, Reisfeld, R.A. and Sell, S. (Eds.) p. 173-191, 1985.
11. Sportsman, J.R., Park, M.M., Cheresch, D.A., Fukuda, M., Elder, J.H. and Fox, R.I. Characterization of a membrane surface glycoprotein associated with T-cell activation. *J. Immunology* 135(1):158-164, 1985.
12. Cheresch, D.A., Honsik, C.J., Staffileno, L.K., Jung, G. and Reisfeld, R.A. Disialoganglioside GD3 on human melanoma serves as a relevant target antigen for monoclonal antibody-mediated tumor cytolysis. *Proc. Natl. Acad. Sci. USA* 82:5155-5159, 1985.
13. Cheresch, D.A. Structural and functional properties of ganglioside antigens on human tumors of neuroectodermal origin. *In: Surv. Synth. Path. Res.*, Cruse, J.M. (Ed.), S. Karger AG, Basel, Vol 4: 97-109, 1985.
14. Reisfeld, R.A. and Cheresch, D.A. Human tumor-associated antigens: targets for monoclonal antibody-mediated cancer therapy. *In: Cancer Surveys*, Oxford Press, Vol 4(1):271-289, 1985.
15. Cheresch, D.A., Pierschbacher, M.D., Herzig, M.A. and Mujoo, K. Disialogangliosides GD2 and GD3 are involved in the attachment of human melanoma and neuroblastoma cells to extracellular matrix proteins. *J. Cell Biol.* 102:688-696, 1986.
16. Cheresch, D.A. and Klier, F.G. Disialoganglioside GD2 distributes preferentially into substrate associated microprocesses of human melanoma cells during their attachment to fibronectin. *J. Cell Biol.* 102:1887-1897, 1986.
17. Cheresch, D.A., Rosenberg, J., Mujoo, K., Hirschowitz, L. and Reisfeld, R.A. Biosynthesis and expression of the disialoganglioside GD2, a relevant target antigen on small cell lung carcinoma for monoclonal antibody-mediated. *Cancer Res.* 46:5112-5118, 1986.
18. Hersey, P., Schibeci, S.D., Townsend, P., Burns, P. and Cheresch, D.A. Potentiation of lymphocyte responses by monoclonal antibodies to the ganglioside GD3. *Cancer Res.* 46:6083-6090, 1986.
19. Reisfeld, R.A. and Cheresch, D.A. Human tumor antigens. *In: Advances in Immunology* (F. Dixon, ed) Vol. 40: 323-377, 1987.
20. Cheresch, D.A. Ganglioside involvement in tumor cell-substratum interactions. *In: Induction and Recognition of the Transformed Cell* (M.I. Greene and T. Hamaoka, eds.) Plenum Publishing Corp.: 407-428, 1987.
21. Mujoo, K., Cheresch, D.A., Yang, H.M. and Reisfeld, R.A. Disialoganglioside GD2 on human neuroblastoma cells: Target antigen for monoclonal antibody-mediated cytolysis and suppression of tumor growth. *Cancer Res.* 47:1098-1104, 1987.
22. Hersey, P., MacDonald, M. P., Burns, C. and Cheresch, D.A. Enhancement of cytotoxic and proliferative responses of lymphocytes from melanoma patients by incubation with monoclonal antibodies against ganglioside GD3. *Cancer Immunology and Immunotherapy* 24:144-150, 1987.
23. Cheresch, D.A. and Harper, J.R. Arg-Gly-Asp recognition by a cell adhesion receptor requires its 130-kDa a subunit. *J. Biol. Chem.* 262(4):1434-1437, 1987.
24. Ortaldo, J.R., Woodhouse, C., Morgan, A.C., Herberman, R.B., Cheresch, D.A. and Reisfeld, R.A. Analysis of effector cells in human antibody-dependent cellular cytotoxicity with murine monoclonal antibodies. *J. Immunol.* 138(10):3566-3572, 1987.

25. Cheresh, D.A., Pytela, R., Pierschbacher, M.D., Klier, F.G., Ruoslahti, E. and Reisfeld, R.A. An Arg-Gly-Asp-directed receptor on the surface of human melanoma cells exists in a divalent cation-dependent functional complex with the disialoganglioside GD2. *J. Cell Biol.* 105:1163-1173, 1987.
26. Cheresh, D.A. Human endothelial cells synthesize and express an Arg-Gly-Asp-directed adhesion receptor involved in attachment to fibrinogen and von Willebrand factor. *Proc. Natl. Acad. Sci. USA* 84:6471-6475, 1987.
27. Cheresh, D.A. and Spiro, R.C. Biosynthetic and functional properties of an Arg-Gly-Asp directed receptor involved in human melanoma cell attachment to vitronectin, fibrinogen, and von Willebrand factor. *J. Biol. Chem.* 262(36):17703-17711, 1987.
28. Rosenberg, J.M., and Cheresh, D.A. Structure, function and biosynthesis of ganglioside antigens associated with human tumors derived from the neuroectoderm. In: *Basic and Clinical Aspects of Malignant Melanoma* (L. Nathanson, ed):61-86, 1987.
29. Rosenberg, J.M., Sander, D.J., Derango, R.E. and Cheresh, D.A. Enzymatic basis for increased expression of GD3 on human melanoma cells derived from metastatic lesions. *J. Clin. Lab. Anal.* 2:91-100, 1988.
30. Smith, J.W. and Cheresh, D.A. The Arg-Gly-Asp binding domain of the vitronectin receptor: Photoaffinity cross-linking implicates amino acid residues 61-203 of the β subunit. *J. Biol. Chem.* 263(35):18726-18731, 1988.
31. Cheresh, D.A. An Arg-Gly-Asp-directed adhesion receptor on human melanoma cells exists in a calcium-dependent functional complex with the disialoganglioside GD2. In: *New Trends in Ganglioside Research* (R. Ledeen, ed.) Vol 14:203-217, 1988.
32. Cheresh, D.A., Pytela, R., Pierschbacher, M.D., Ruoslahti, E. and Reisfeld, R.A. Human melanoma cell attachment involves an Arg-Gly-Asp-directed adhesion receptor and the disialoganglioside GD2. *Immunity to Cancer II*; 288:3-24, 1989.
33. Lam, S.C.T., Plow, E.F., D'Souza, S.E., Cheresh, D.A., Frelinger III, A.L. and Ginsberg, M.H. Isolation and characterization of a platelet membrane protein related to the vitronectin receptor. *J. Biol. Chem.* 264(7):3742-3749, 1989.
34. Schibeci, S., Hersey, P. and Cheresh, D.A. Potentiation of interleukin-2 production and its binding by monoclonal antibodies to the gangliosides GD3 and GD2. *Cancer Immunology and Immunotherapy* 29:109-117, 1989.
35. Schindler, M., Meiners, S. and Cheresh, D.A. RGD-dependent linkage between plant cell wall and plasma membrane: consequences for growth. *J. Cell Biol.* 108:1955-1965, 1989.
36. Cheresh, D.A., Smith, J.W., Cooper, H.M. and Quaranta, V. A novel vitronectin receptor integrin ($\alpha v \beta 3$) is responsible for the distinct adhesive properties of carcinoma cells. *Cell* 57:59-69, 1989.
37. Cheresh, D.A., Berliner, S.A., Vicente, V. and Ruggeri, Z.M. Recognition of distinct adhesive sites on fibrinogen by related integrins on platelets and endothelial cells. *Cell* 58:945-953, 1989.
38. Mujoo, K., Kipps, T.J., Yang, H.M., Cheresh, D.A., Wargalla, U., Sander, D.J. and Reisfeld, R.A. Functional properties and effect on growth suppression of human neuroblastoma tumors by isotype switch variants of monoclonal antiganglioside GD2 antibody 14.18. *Can. Res.* 49:2857-2861, 1989.
39. Hersey, P., Schibeci, S. and Cheresh, D.A. Augmentation of lymphocyte responses by monoclonal antibodies to the gangliosides GD3 and GD2: the role of protein kinase C, cyclic nucleotides and intracellular calcium. *Cellular Immunol.* 119:263-278, 1989.
40. Smith, J.W. and Cheresh, D.A. Integrin ($\alpha v \beta 3$)-ligand interaction: Identification of a heterodimeric RGD binding site on the vitronectin receptor. *J. Biol. Chem.* 265(4):2168-2172, 1990.

41. Krissansen, G.W., Elliot, M.J., Lucas, C.M., Stomski, F.C., Berndt, M.C., Cheresh, D.A., Lopez, A.F. and Burns, G.F. Identification of a novel integrin β subunit expressed on cultured monocytes (macrophages): Evidence that one α subunit can associate with multiple β subunits. *J. Biol. Chem.* 265(2):823-830, 1990.
42. Smith, J.W., Vestal, D.J., Irwin, S., Burke, T. and Cheresh, D.A. Purification and functional characterization of integrin $\alpha v \beta 5$. An adhesion receptor for vitronectin. *J. Biol. Chem.* 265:11008-11013, 1990.
43. Smith, J.W., Ruggeri, Z.M., Kunicki, T.J. and Cheresh, D.A. Interaction of integrins $\alpha v \beta 3$ and glycoprotein IIb/IIIa with fibrinogen. Differential peptide recognition accounts for distinct binding sites. *J. Biol. Chem.* 265(21):12267-12271, 1990.
44. Krissansen, G.W., Lucas, C.M., Stumski, F.C., Elliot, M.J., Berndt, M.C., Boyd, A.W., Horton, M.A., Cheresh, D.A., Vadas, M.A. and Burns, G.F. Blood leukocytes bind platelet glycoprotein (IIb/IIIa) but do not express the vitronectin receptor. *Intl. Immunol.* 2(3):267-277, 1990.
45. Ylanne, J., Cheresh, D.A. and Virtanen, I. Localization of $\beta 1$, $\beta 3$, $\alpha 5$, αv and αIIb subunits of the integrin family in spreading human erythroleukemia cells. *Blood* 76(3):570-577, 1990.
46. McLean, J.W., Vestal, D.J., Cheresh, D.A. and Bodary, S.C. cDNA sequence of the human integrin $\beta 5$ subunit. *J. Biol. Chem.* 265(28):17126-17131, 1990.
47. Harel, W., Shau, H., Hadley, C.G., Morgan, A.C., Reisfeld, R.A., Cheresh, D.A. and Mitchell, M.S. Increased lysis of melanoma by in vivo-elicited human lymphokine-activated killer cells after addition of antiganglioside antibodies in vitro. *Cancer Res.* 50:6311-6315, 1990.
48. Charo, I.F., Nannizzi, L., Smith, J.W. and Cheresh, D.A. The vitronectin receptor $\alpha v \beta 3$ binds fibronectin and acts in concert with $\alpha 5 \beta 1$ in promoting cellular attachment and spreading on fibronectin. *J. Cell Biol.* 111(6):2795-2800, 1990.
49. Rudolph, R. and Cheresh, D.A. Cell adhesion mechanisms and their potential impact on wound healing and tumor control. In: *Clinics in Plastic Surgery* Vol 17(3):457-462, 1990.
50. Smith, J.W. and Cheresh, D.A. Getting unglued about integrins. Review of the UCLA Symposium on Cellular Adhesion at Steamboat Springs, January 20th-26th, 1990. In: *The New Biologist* Vol 2(6): 518-522, 1990.
51. Collier, B.S., Cheresh, D.A., Asch, E. and Seligsohn, U. Platelet vitronectin receptor expression differentiates Iraqi-Jewish from Arab patients with Glanzmann thrombasthenia in Israel. *Blood* 77:75-83, 1991.
52. Kieffer, N., Fitzgerald, L.A., Wolf, D.L., Cheresh, D.A. and Phillips, D.R. Adhesive properties of the $\beta 3$ integrins: GPIIb-IIIa and the vitronectin receptor individually expressed in human melanoma cells. *J. Cell Biol.* 113:451-461, 1991.
53. Cheresh, D.A. Structure, function and biological properties of integrin $\alpha v \beta 3$ on human melanoma cells. *Cancer Metastasis Reviews* 10:3-10, 1991.
54. Wayner, E.A., Orlando, R.A. & Cheresh, D.A. Integrins $\alpha v \beta 3$ and $\alpha v \beta 5$ contribute to cell attachment to vitronectin but differentially distribute on the cell surface. *J. Cell Biol.* 113:919-929, 1991.
55. Smith, J. W. and Cheresh, D.A. Labeling of Integrin $\alpha v \beta 3$ with 58 Co (III); Evidence of metal ION coordination sphere involvement in ligand binding. *J. Biol. Chem.* 266:11429-11432, 1991.
56. Cheresh, D.A. Integrins in thrombosis, wound healing and cancer. *Extracellular Matrix in Health and Disease* 19:835-838, 1991.

57. Orlando, R. A. and Cheresch, D.A. Arginine-glycine-aspartic acid binding leading molecular stabilization between integrin $\alpha v \beta 3$ and its ligand. *J. Biol. Chem.* 266:19543-19550, 1991.
58. Miyauchi, A., Alvarez, J., Greenfield, E., Teti, A., Grano, M., Collucci, S., Zamboni-Zallone, A., Ross, F., Teitelbaum, S., Cheresch, D.A. and Hruska, K. Recognition of osteopontin and related peptides by an $\alpha v \beta 3$ integrin stimulates immediate cell signals in osteoclasts. *J. Biol. Chem.* 266:20369-20374, 1991.
59. Gladson, C.L. and Cheresch, D.A. Glioblastoma expression of vitronectin and the $\alpha v \beta 3$ integrin: Adhesion mechanism of transformed glial cells. *J. Clin. Invest.* 88: 1924-1932, 1991.
60. Cheresch, D.A. Integrins: Structure, Function and Biological Properties. In: *Advances in Molecular and Cell Biology* Vol. 6:225-252, 1992.
61. Felding-Habermann, B., Ruggeri, Z. and Cheresch, D.A. Distinct biological consequences of integrin $\alpha v \beta 3$ -mediated melanoma cell adhesion to fibrinogen and its plasminic fragments. *J. Biol. Chem.* 267:5070-5077, 1992.
62. Leavesley, D.L., Ferguson, G. and Cheresch, D.A. Requirement of integrin $\beta 3$ subunit for carcinoma cell spreading and migration on vitronectin and fibrinogen. *J. Cell Biol.* 117:1101-1107, 1992.
63. Felding-Habermann, B., Mueller, B., Romerdahl, C. and Cheresch, D.A. Involvement of Integrin αv gene expression in human melanoma tumorigenicity. *J. Clin. Invest.* 89: 2018-2022, 1992.
64. Sanders, L., Felding-Habermann, B., Mueller, B. and Cheresch, D.A. Role of αv integrins and vitronectin in human melanoma cell growth. *Cold Spring Harbor Symposia on Quantitative Biology* 57: 233-240, 1992.
65. Cheresch, D.A. Structural and biologic properties of integrin-mediated cell adhesion. *Laboratory Immunology II* 12:217-236, 1992.
66. Nip, J., Shibata, H., Loskotoff, D.J., Cheresch, D.A., and Brodt, P. Human melanoma cells derived from lymphatic metastasis use $\alpha v \beta 3$ to adhere to lymph node vitronectin. *J. Clin. Invest.* 90:1406-1413, 1992.
67. Ross, F.P., Alvarez, J.I., Chappel, J., Sander, D., Butler, W.T., Carson, M.C., Robey, P.G., Teitelbaum, S.L. and Cheresch, D.A. Interactions between the bone matrix proteins osteopontin and bone sialoprotein and the osteoclast integrin $\alpha v \beta 3$ potentiate bone resorption. *J. Biol. Chem.* 268:9901-9907, 1993.
68. Leavesley, D.L., Schwartz, M.A., Rosenfeld, M. and Cheresch, D.A. Integrin $\beta 1$ and $\beta 3$ -mediated endothelial cell migration is triggered through distinct signaling mechanisms. *J. Cell Biol.* 121:163-170, 1993.
69. Felding-Habermann, B. and Cheresch, D.A. Vitronectin and its Receptors. *Current Opin. in Cell Biol.* 5:864-868, 1993.
70. Wickham, T.J., Mathias, P., Cheresch, D.A. and Nemerow, G.R. Integrins $\alpha v \beta 3$ and $\alpha v \beta 5$ promote adenovirus internalization but not virus attachment. *Cell* 73:309-319, 1993.
71. Filardo, E. and Cheresch, D.A. Beta turn in the cytoplasmic tail of the integrin αv subunit influences conformation and ligand-binding of $\alpha v \beta 3$. *J. Biol. Chem.* 269:4641-4647, 1994.
72. Nemerow, G.R., Wickham, T.J. and Cheresch, D.A. The role of αv integrins in adenovirus infection. In: *Biology of Vitronectins and Their Receptors* (K.T. Preissner, S. Rosenblatt, C. Kost, J. Wegerhoff, D. F. Mosher, eds.) In: *Excerpta Medica International Congress Series, Elsevier Science Publishers*: 177-184, 1993.
73. Nemerow, G.R., Cheresch, D.A. and Wickham, T.J. Adenovirus entry into host cells: A role for αv integrins. *Trends in Cell Biol.* 4:52-55, 1994.

74. Brooks, P.C., Clark, R.A.F. and Cheresh, D.A. Requirement of vascular integrin $\alpha v \beta 3$ for angiogenesis. *Science* 264:569-571, 1994.
75. Montgomery, A.M.P., Reisfeld, R.A. and Cheresh, D.A. Integrin $\alpha v \beta 3$ rescues melanoma cells from apoptosis in a three-dimensional collagen matrix. *Proc. Natl. Acad. Sci. USA* 91:8856-8860, 1994.
- 75a. Gladson, C. and Cheresh, D.A. The αv integrins. In: *Integrin: The Biological Problem* (Y. Takada, ed.): 83-99, 1994.
76. Delannet, M., Martin, F., Bossy, B., Cheresh, D.A., Reichardt, L.F. and Duband, J.L. Specific roles of the $\alpha v \beta 1$ and $\alpha v \beta 5$ integrins in avian neural crest cell adhesion and migration on vitronectin. *Development* 120:2687-2702, 1994.
77. Wickham, T.J., Filardo, E.J., Cheresh, D.A. and Nemerow, G. Integrin $\alpha v \beta 5$ selectively promotes adenovirus-mediated cell membrane permeabilization following internalization. *J. Cell Biol.* 127:257-264, 1994.
78. Klemke, R.L., Yebra, M., Bayna, E.M. and Cheresh, D.A. Receptor tyrosine kinase signaling required for integrin $\alpha v \beta 5$ -directed cell motility but not adhesion on vitronectin. *J. Cell Biol.* 127:859-866, 1994.
79. Brooks, P.C., Montgomery, A.M.P., Rosenfeld, M., Reisfeld, R.A., Hu, T., Klier, G. and Cheresh, D.A. Integrin $\alpha v \beta 3$ antagonists promote tumor regression by inducing apoptosis of angiogenic blood vessels. *Cell* 79:1157-1164, 1994.
80. Gladson, C., Wilcox, J.N., Sanders, L., Gillespie, G.Y. and Cheresh, D.A. Cerebral microenvironment influences expression of the vitronectin gene in astrocytic tumors. *J. Cell Sci.* 108:947-956, 1995.
81. Felding-Habermann, B., Mueller, B.M., Sanders, L.C., and Cheresh, D. A. Crucial involvement of αv integrins in malignant phenotype expression of human melanoma cells. In: *Cell Adhesion Molecules in Cancer & Inflammation*. (A.A. Epenetos, M. Pignatelli. eds.), 1995.
82. Liaw, L.L., Skinner, M.P., Raines, E.W., Ross, R., Cheresh, D.A., Schwartz, S.M. and Giachelli, C.M. The adhesive and migratory effects of osteopontin are mediated via distinct cell surface integrins. *J. Clin. Invest.* 95:713-724, 1995.
83. Yebra, M., Filardo, E.J., Bayna, E.M., Kawahara, E., Becker, J.C. and Cheresh, D.A. Induction of carcinoma cell migration on vitronectin by NF- κ B-dependent gene expression. *Mol. Biol. of Cell.* 6:841-850, 1995.
84. Hruska, K.A., Rolnick, F., Huskey, M., Alvarez, U. and Cheresh, D.A. Engagement of the osteoclast integrin $\alpha v \beta 3$ by osteopontin stimulates phosphatidylinositol 3-hydroxyl kinase activity. *Endocrinology* 136(7):2984-2992, 1995.
85. Filardo, E.J., Brooks, P., Deming, S., Damsky, C. and Cheresh, D.A. Requirements of the NPXY motif in the integrin $\beta 3$ subunit cytoplasmic tail for melanoma cell adhesive function & malignancy. *J. Cell Biol.* 130:441-450, 1995.
86. Drake C.J., Cheresh, D.A. and Little, C.D. An antagonist of integrin $\alpha v \beta 3$ prevents maturation of blood vessels during embryonic neovascularization. *J. Cell Sci.* 108:2655-2661, 1995.
87. Wilson, C.B., Leopard, J., Nakamura, R.M., Cheresh, D.A., Stein, P.C. and Parsons, C.L. Selective Type IV collagen defects in the urothelial basement membrane in interstitial cystitis. *J. Urology* 154:1222-1226, 1995.
88. Varner, J.A., Brooks, P.C. and Cheresh, D.A., The Integrin $\alpha v \beta 3$: Angiogenesis and apoptosis. *Cell Adh. Comm.* 3:367-374, 1995.

89. Brooks, P.C., Strömblad, S., Klemke, R., Visscher, D., Sarkar, F.H. and Cheresh, D.A. Anti integrin $\alpha\beta 3$ blocks human breast cancer growth and angiogenesis in human skin. *J. Clin. Invest.* 96:1815-1822, 1995.
90. Friedlander, M., Brooks, P.C., Shaffer, R.W., Kincaid, C.M., Varner, J.A., and Cheresh, D.A. Definition of two angiogenic pathways by distinct α integrins. *Science* 270:1500-1502, 1995.
91. Varner, J.A. and Cheresh, D.A. Tumor angiogenesis and the role of vascular cell integrin $\alpha\beta 3$. In: *Important Advances in Oncology* (V.T. DeVita, S. Hellman, S.A. Rosenberg, eds.):69-87, 1996.
92. Clarke, R.A.F., Tonnesen, M.G., Galit, J. and Cheresh, D.A. Transient functional expression of $\alpha\beta 3$ on vascular cells during wound repair. *Amer. J. Path.* 148(5):1407-1421, 1996.
93. Montgomery, A.M.P., Becker, J.C., Siu, C-H., Lemmon, V.P., Cheresh, D.A., Pancook, J.D., Zhao, X. and Reisfeld, R.A. Human neural cell adhesion molecule L1 and rat homologue NILE are ligands for integrin $\alpha\beta 3$. *J. Cell Biol.* 132(3):475-485, 1996.
94. Sakamoto, H., Brockelmann, T., Cheresh, D.A., Ramirez, F., Rosenbloom, J. and Mecham, R.P. Cell-type specific recognition of RGD- and non-RGD-containing cell binding domains in fibrillin-1. *J. Biol. Chem.* 271(9):4916-4922, 1996.
95. Brooks, P.C., Stromblad, S., Sanders, L.C., Von Schalscha, L.T., Aimes, R.T., Stetler-Stevenson, W.G., Quigley, J.P. and Cheresh, D.A. Localization of matrix metalloproteinase MMP-2 to the surface of invasive cells by interaction with integrin $\alpha\beta 3$. *Cell* 85:683-693, 1996.
96. Okada, Y., Copeland, B.R., Hamann, G.F., Koziol, J.A., Cheresh, D.A. and Del Zoppo, G.J. Integrin $\alpha\beta 3$ is expressed in selected microvessels following focal cerebral ischemia. *Amer. J. Path.* 149(1):37-44, 1996.
97. Filardo, E.J., Deming, S.L. and Cheresh, D.A. Regulation of cell migration by the integrin β subunit ectodomain. *J. Cell Sci.* 109:1615-1622, 1996.
98. Wilson, C.B., Leopard, J., Cheresh, D.A. and Nakamura, R.M. Extracellular matrix and integrin composition of the normal bladder wall. *W.J. Urology* 14:S30-S37, 1996.
99. Strömblad, S., Becker, J.C., Yebra, M., Brooks, P.C. and Cheresh, D.A. Suppression of p53 and p21WAF1/CIP1 expression by vascular cell integrin $\alpha\beta 3$ during angiogenesis in vivo. *J. Clin. Invest.* 98(2):426-433, 1996.
100. Friedlander, M., Theesfeld, C.L., Sugita, M., Fruttiger, M., Thomas, M.A., Chang, S. and Cheresh, D.A. Involvement of integrins $\alpha\beta 3$ and $\alpha\beta 5$ in ocular neovascular diseases. *Proc. Natl. Acad. Sci.* 93:9764-9769, 1996.
101. Chellaiah, M., Fitzgerald, C., Filardo, E.J., Cheresh, D.A. and Hruska, K.A. Osteopontin activation of c-src in human melanoma cells requires the cytoplasmic domain of the integrin α -subunit. *Endocrinology* 137(6):2432-2440, 1996.
102. Varner, J.A. and Cheresh, D.A. Integrins and Cancer. *Current Opin. in Cell Biol.* 8:724-720, 1996.
103. Lewis, J.M., Cheresh, D.A. and Schwartz, M.A. Protein kinase C regulates $\alpha\beta 5$ -dependent cytoskeletal associations and FAK phosphorylation. *J. Cell Biol.* 134(5):1323-1332, 1996.
104. Strömblad, S. and Cheresh, D.A. Cell Adhesion and Angiogenesis. In: *Trends in Cell Biology* (Sweet, D. ed.), 1996.
105. Yebra, M., Parry, G.C.N., Stömblad, S., Mackman, N., Rosenberg, S., Mueller, B.M. and Cheresh, D.A. Requirement of receptor-bound urokinase-type plasminogen activator for integrin $\alpha\beta 3$ -directed cell migration. *J. Biol. Chem.* 271(46):29393-29399, 1996.

106. Strömblad, S. and Cheresh, D. A. Integrins, angiogenesis and vascular cell survival. *Current Biology Ltd. Chemistry & Biology* 3:881-885, 1996.
107. Mousa, S.A. and Cheresh, D.A. Recent advances in cell adhesion molecules and extracellular matrix proteins: potential clinical implications. *Drug Discovery Today* 2:187-199, 1997.
108. Brooks, P.C., Klemke, R.L., Schön, S., Lewis, J.M., Schwartz, M.A. and Cheresh, D.A. Insulin like growth factor receptor cooperates with integrin $\alpha v \beta 5$ to promote tumor cell dissemination in vivo. *J. Clin. Invest.* 99(6):1390-1398, 1997.
109. Klemke, R.L., Schuang, C., Giannini, A. L., Gallagher, P.J., De Lanerolle, P. and Cheresh, D.A. Regulation of cell motility by mitogen-activated protein kinase. *J. Cell Biol.* 137(2):481-492, 1997.
110. Boudreau, N., Andrews, C., Srebrow, A., Ravanpay, A. and Cheresh, D.A. Regulation of the angiogenic phenotype by Hox D3. *J. Cell Biol.* 139(1):257-264, 1997.
111. Felding-Habermann, B., Silletti, S., Mei, F., Siu, C., Yip, P., Brooks, P.C., Cheresh, D.A., Ginsberg, M.H. and Montgomery, A.M.P. A single immunoglobulin-like domain of the human neural cell adhesion molecule L1 supports adhesion by multiple vascular and platelet integrins. *J. Cell Biol.* 139(6):1567-1581, 1997.
112. Brooks, P.C., Silletti, S., Von Schalscha, T.L., Friedlander, M. and Cheresh, D.A. Disruption of angiogenesis by PEX, a non-catalytic metalloproteinase fragment with integrin binding activity. *Cell* 92:391-400, 1998.
113. Klemke, R.L., Leng, J., Molander, R., Brooks, P.C., Vuori, K. and Cheresh, D.A. CAS/Crk coupling serves as a "Molecular Switch" for induction of cell migration. *J. Cell Biol.* 140(4):961-972, 1998.
114. Eliceiri, B.P., Klemke, R., Strömblad, S. and Cheresh, D.A. Integrin $\alpha v \beta 3$ requirement for sustained mitogen-activated protein kinase activity during angiogenesis. *J. Cell Biol.* 140:1255-1263, 1998.
115. Li, E., Stupack, D., Klemke, R.C., Cheresh, D.A. and Nemerow, G.R. Adenovirus endocytosis via αv integrins requires phosphoinositide-3-OH kinase. *J. Virology* 72:2055-2061, 1998.
116. Cheresh, D.A. Death to a blood vessel, death to a tumor. *Nature Med.* 4(4):395-396, 1998.
117. Sipkins, D. A., Cheresh, D.A., Kazemi, M.R., Bednarski, M.D. and Li, K.C.P. Detection of tumor angiogenesis in vivo by $\alpha v \beta 3$ -targeted magnetic resonance imaging. *Nat. Med.* 4(5):623-626, 1998.
118. Rader, C., Cheresh, D.A. and Barbas, C.F. A phage display approach for rapid antibody humanization: Designed combinatorial V gene libraries. *Proc. Natl. Acad. Sci.* 95:8910-15, 1998.
119. Nicolaou, K.C., Trujillo, J.I., Jandeleit, B., Chibale, K., Rosenfeld, M., Diefenbach, B., Cheresh, D.A. and Goodman, S.L. Design, synthesis, and biological evaluation of nonpeptide integrin antagonists. *J. Bio-Org. Med. Chem.* 6:1185-1208, 1998.
120. Gasparini, G., Brooks, P.C., Biganzoli, E., Vermeulen, P.C., Bonoldi, E., Dirix, L.Y., Ranieri, G., Miceli, R. and Cheresh, D.A. Vascular integrin $\alpha v \beta 3$: A new prognostic indicator in breast cancer. *Clin. Ca. Res.* 4(11):2625-2634, 1998.
121. Van der Zee, R., Murohara, T., Passeri, J., Kearney, M., Cheresh, D.A. and Isner, J.M. Reduced intimal thickening following $\alpha v \beta 3$ blockade is associated with smooth muscle cell apoptosis. *Cell Adh. Comm.* 6(5):371-379, 1998.
122. Eliceiri, B.P. and Cheresh, D.A. The role of αv integrins during angiogenesis. *Mol. Med.* 4:741-750, 1998.

123. Storgard, C.M., Stupack, D.G., Jonczyk, A., Goodman, S.L. Fox, R.I., and Cheresh, D.A. Decreased angiogenesis and arthritic disease in rabbits treated with an $\alpha v \beta 3$ antagonist. *J. Clin. Invest.* 103:47-54, 1999.
- 123a. Stupack, D.G., Storgard, C.M. and Cheresh, D.A. A role for angiogenesis in rheumatoid arthritis. *Braz. J. Med. Biol. Res.* 32:573-581, 1999.
124. Lode, H.N., Moehler, T., Xiang, R., Jonczyk, A., Gillies, S.D., Cheresh, D.A. and Reisfeld, R.A. Synergy between an anti-angiogenic integrin αv antagonist and an antibody-cytokine fusion protein eradicates spontaneous tumor metastases. *Proc. Natl. Acad. Sci.* 96:1591-1596, 1999.
125. Stupack, D.G., Li, E., Kehler, J.A., Geahlen, R.L., Hahn, K., Nemerow, G.R. and Cheresh, D.A. Matrix valency regulates integrin-mediated lymphoid adhesion via Syk kinase. *J. Cell Biol.* 144(4):777-787, 1999.
126. Brooks, P.C., Montgomery, A.M.P. and Cheresh, D.A. Use of the 10 day old chick embryo model for studying angiogenesis. In: *Methods in Molecular Biology. Humana Press.* (A.R Howlett, ed.), 129: 257-269, 1999.
127. Petitclerc, E., Stromblad, S., Von Schalscha, T.L., Mitjans, F., Piulats, J., Montgomery, A.M.P., Cheresh, D.A. and Brooks, P.D. Integrin $\alpha v \beta 3$ promotes M21 melanoma growth in human skin by regulating tumor cell survival. *Cancer Res.* 59:2724-2730, 1999.
128. Eliceiri, B.P. and Cheresh, D.A. The role of αv integrins during angiogenesis. In: *Biomedical Progress* (Nedde, D. ed.), 1999.
129. Cheresh, D.A., Leng, J. and Klemke, R.L. Regulation of cell contraction and membrane ruffling by distinct signals in migratory cells. *J. Cell Biol.* 146(5):1107-1116, 1999.
130. Eliceiri, B.P. and Cheresh, D.A. The role of αv integrins during angiogenesis: insights into potential mechanisms of action and clinical development. *J. Clin. Invest.* 103(9):1227-1230, 1999.
131. Eliceiri, B.P., Paul, R., Schwartzberg, P.L., Hood, J.D., Leng, J. and Cheresh, D.A. Selective requirement for Src kinases during VEGF-induced angiogenesis and vascular permeability. *Mol. Cell* 4:915-924, 1999.
132. Leng, J., Klemke, R.L., Reddy, A.C. and Cheresh, D.A. Potentiation of cell migration by adhesion-dependent cooperative signals from the GTPase Rac and Raf kinase. *J. Biol. Chem.* 274: 37855-37861, 1999.
133. Pampori, N., Hato, T., Stupack, D., Aidoudi, S., Cheresh, D.A., Nemerow, G. and Shattil, S. Mechanisms and consequences of affinity modulation of integrin $\alpha v \beta 3$ detected with a novel patch-engineered monovalent ligand. *J. Biol. Chem.* 274(31):21609-21616, 1999.
134. Collins, L.R., Ricketts, W.A., Yeh, L. and Cheresh, D.A. Bifurcation of cell migratory and proliferative signaling by the adaptor protein Shc. *J. Cell Biol.* 147(7):1561-1568, 1999.
135. Silletti, S. and Cheresh, D.A. A link between integrins and MMP's in angiogenesis. *Fibrinolysis and Proteolysis* 13(6):226-238, 1999.
136. Eliceiri, B.P. and Cheresh, D.A. $\alpha v \beta 3$ and its antagonists in the control of angiogenesis. In: *Tumor Angiogenesis and Microcirculation.* Voest, E. & D'Amore, P, (Eds.). Marcel Dekker, Inc., New York, NY, 2000.
137. Eliceiri B.P. and Cheresh, D.A. Role of αv integrins during angiogenesis. *The Cancer Journal* 6(3):S245-S250, 2000.
138. Wang, K., Tinglu, G., Cheresh, D.A. and Nemerow, G.R. Regulation of adenovirus membrane penetration by the cytoplasmic tail of integrin $\beta 5$. *J. Virol.* 74:2731-2739, 2000.

139. Gutheil, J.C., Campbell, T.N., Pierce, P.R., Watkins, J.D., Huse, W.D., Bodkin, D.J., and Cheresch, D.A. Targeted anti-angiogenic therapy for cancer using vitaxin: A humanized monoclonal antibody to the integrin $\alpha v \beta 3$. *Clin. Cancer Res.* 6:3056-3061, 2000.
140. Huang, S., Stupack, D., Liu, A., Cheresch, D.A. and Nemerow, G.R. Cell growth and matrix invasion of EBV-immortalized human B lymphocytes is regulated by expression of αv integrins. *Oncogene* 19(15):1915-23, 2000.
141. Bello, L., Zhang, J.P., Nikas, D.C., Strasser, J.F., Villani, R.M., Cheresch, D.A., Carroll, R.S. and Black, P.M. $\alpha v \beta 3$ and $\alpha v \beta 5$ integrin expression in meningiomas. *Neurosurgery* 47(5):1185-1195, 2000.
142. Pfeifer, A., Kessler, T., Silletti, S., Cheresch, D.A. and Verma, I.M. Suppression of angiogenesis by lentiviral delivery of PEX, a non-catalytic fragment of matrix metalloproteinase-2. *Proc. Natl. Acad. Sci.* 97(22):12227-32, 2000.
143. Bonfoco, E., Chen, W., Paul, R., Cheresch, D.A. and Cooper, N. $\beta 1$ integrin antagonism on adherent, differentiated human neuroblastoma cells triggers an apoptotic signaling pathway. *Neuroscience* 101:1145-1152, 2000.
144. MacDonald, T.J., Shimada, H., Tabrizi, P., Zlokovic, B.V., Cheresch, D.A. and Laug, W.E. Preferential susceptibility of brain tumors to the anti-angiogenic effects of αv -integrin antagonist. *Neurosurgery* 48:151-157, 2001.
145. Silletti, S., Kessler, T., Goldberg, J., Boger, D.L. and Cheresch, D.A. Disruption of MMP2 binding to integrin $\alpha v \beta 3$ by a novel organic molecule that inhibits angiogenesis and tumor growth in vivo. *Proc. Natl. Acad. Sci.* 98(1):119-124, 2001.
146. Paul, R., Zhang, Z.G., Eliceiri, B.P., Jiang, Q., Zhang, R.L., Chopp, M. and Cheresch, D.A. Src deficiency or blockade of Src activity in mice provides cerebral protection following stroke. *Nature Med.* 7: 222-227, 2001.
147. Boger, D.L., Goldberg, J., Silletti, S., Kessler, T. and Cheresch, D.A. Identification of a novel class of small-molecule anti-angiogenic agents through the screening of combinatorial libraries which function by inhibiting the binding and localization of protease MMP2 to integrin $\alpha v \beta 3$. *J. Am. Chem. Soc.* 123:1280-88, 2001.
148. Pfeifer, A., Kessler, T., Yang, M., Baranov, E., Kootstra, N., Cheresch, D. A., Hoffman, R. M. and Verma I. Transduction of liver cells by lentiviral vectors: Analysis in living animals by fluorescence imaging. *Molec. Therapy* 3: 319-322, 2001.
149. Bello, L., Francolini, M., Marthyn, P., Zhang, J.P., Carroll, R.S., Nikas, D.C., Strasser, J.F., Villani, R., Cheresch, D.A. and Black, P.M. $\alpha v \beta 3$ and $\alpha v \beta 5$ integrin expression in glioma periphery. *Neurosurgery* 49(2):380-389, 2001.
150. Eliceiri, B.P. and Cheresch, D.A. Adhesion events in angiogenesis. *Current Opinion in Cell Biology* 13:563-568, 2001.
151. Stupack, D.G., Puente, X.S., Boutsaboualoy, S., Storgard, C.M. and Cheresch, D.A. Apoptosis of adherent cells by recruitment of caspase-8 to unligated integrins. *J. Cell Biol.* 155(3):459-470, 2001
152. Li, E., Brown, S.L., Stupack, D.G., Puente, X.S., Cheresch, D.A. and Nemerow, G.R. Integrin $\alpha v \beta 1$ is an adenovirus coreceptor. *J. of Virology* 75(11):5405-5409, 2001.
153. Hood, J.D. and Cheresch, D.A. Role of integrins in cell invasion and migration. *Nature Reviews Cancer* 2(2):91-100, 2002.

154. Otani, A., Slike, B.M., Dorrell, M.I., Hood, J.D., Kinder, K., Ewalt, K.L., Cheresch, D.A., Schimmel, P. and Friedlander, M. A fragment of human TrpRS as a potent antagonist of ocular angiogenesis. *Proc. Natl. Acad. Sci.* 99(1):178-183, 2002.
155. Wakasugi, K., Slike, B.M., Hood J.D., Otani, A., Ewalt, K.L., Friedlander, M., Cheresch, D.A. and Schimmel, P. A human aminoacyl-tRNA synthetase as a regulator of angiogenesis. *Proc. Natl. Acad. Sci.* 99(1):173-177, 2002.
156. Kiosses, W.B., Hood, J., Yang, S., Gerritsen, M.E., Cheresch, D.A., Alderson, N. and Schwartz, M.A. A dominant-negative p65 PAK peptide inhibits angiogenesis. *Cir. Res.* 90:697-702, 2002.
157. Cheresch, D.A. and Stupack, D.G. Integrin-mediated death: An explanation of the integrin-knockout phenotype? *Nat. Med.* 8:193-194, 2002.
158. Eliceiri, B.P., Puente, X.S., Hood, J.D., Stupack, D.G., Schlaepfer, D.D., Huang, X.Z., Sheppard, D. and Cheresch, D.A. Src-mediated coupling of focal adhesion kinase to integrin $\alpha\beta 5$ in vascular endothelial growth factor signaling. *J. Cell Biol.* 157:149-159, 2002.
159. Stromblad, S., Fotedar, A., Brickner, H., Theesfeld, C., de Diaz, E.A., Friedlander, M., and Cheresch, D.A. Loss of p53 compensates for αv -integrin function in retinal neovascularization. *J. Biol. Chem.* 277:13371-13374, 2002.
160. Nemerow, G.R. and Cheresch, D.A. Herpesvirus hijacks an integrin. *Nat. Cell Biol.* 4:E69-E72, 2002
161. Stupack, D.G., and Cheresch, D.A. Integrin-Targeted Angiostatics. In: *Encyclopedia of Cancer*, Second Edition, Bertino, J.R. (Ed.) Elsevier Science (USA), San Diego, CA 2:501-509, 2002.
162. Hood, J.D., Bednarski, M., Frausto, R., Guccione, S., Reisfeld, R.A., Xiang, R. and Cheresch, D.A. Tumor regression by targeted gene delivery to the neovasculature. *Science* 296:2404-2407, 2002.
163. Wakasugi, K., Slike, B.M., Hood, J., Ewalt, K.L., Cheresch, D.A., & Schimmel, P. Induction of angiogenesis by a fragment of human tyrosyl-tRNA synthetase. *J. Biol. Chem.* 277:20124-20126, 2002.
164. Stupack, D.G. and Cheresch, D.A. Get a ligand, get a life: integrins, signaling and cell survival. *J. Cell Sci.* 115:3729-3738, 2002.
165. Hauck, C.R., Hsia, D.A., Puente, X.S., Cheresch, D.A. & Schlaepfer, D.D. FRNK blocks v-Src-stimulated invasion and experimental metastases without effects on cell motility or growth. *EMBO J.* 21(23):6289-6302, 2002.
166. Hsia, D.A., Mitra, S.K., Hauck, C.R., Strelow, D.N., Nelson, J.A., Ilic, D., Huang, S., Li, E., Nemerow, G.R., Leng, J., Spencer, K., Cheresch, D.A. & Schlaepfer, D.D. Differential regulation of cell motility and invasion by FAK. *J. Cell Biol.* 160(5):753-767, 2003.
167. Alavi, A., Hood, J.D., Frausto, R., Stupack, D.G. and Cheresch, D.A. Role of Raf in vascular protection from distinct apoptotic stimuli. *Science* 301:94-96, 2003.
168. Hood, J.D. & Cheresch D.A. Targeted delivery of mutant Raf kinase to neovessels causes tumor regression. *Cold Spring Harbor Symposia on Quantitative Biology* Vol. LXVII, 2002.
169. Hood, J.D. & Cheresch, D.A. Building a better Trap. *Proc. Natl. Acad. Sci.*, 100(15):8624-8625, 2003.
170. Hood, J.D., Frausto, R., Kiosses, W.B., Schwartz, M.A., & Cheresch, D.A. Differential αv integrin-mediated Ras-ERK signaling during two pathways of angiogenesis. *J. Cell Biol.* 162(5):933-943, 2003.
171. Stupack, D.G. and Cheresch, D.A. Apoptotic cues from the extracellular matrix: regulators of angiogenesis. *Oncogene* 22:9022-9029, 2003.

172. Weis, S., Shintani, S., Weber, A., Kirchmair, R., Wood, M., Cravens, A., McSharry, H., Iwakura, A., Yoon, Y-s, Himes, N., Burstein, D., Doukas, J., Soll, R., Losordo, D., Cheresh, D.A. Src blockade stabilizes a Fln/Cadherin complex, reducing edema and tissue injury following myocardial infarction. *J. Clin. Inv.* 113: 885-894, PMC362122, 2004.
173. Stupack, D.G. & Cheresh, D.A. A Bit-role for integrins in apoptosis. *Nat. Cell Biol.* 6:388-389, 2004.
174. Stupack, D.G. and Cheresh, D.A. Integrins and Angiogenesis. In: *Current Topics Dev. Biol.*, (G.P.Schatten, Ed.) Vol. 64: 207-238, 2004.
175. Weis, S. M., Cui, J., Barnes, L., Cheresh, D.A. Endothelial barrier disruption by VEGF-mediated Src activity potentiates tumor cell extravasation and metastasis. *J. Cell Biol.* 167(2): 223-229, PMC2172541, 2004.
176. Potter, M.D., Barbero, S., and Cheresh, D.A. Tyrosine Phosphorylation of VE-cadherin Prevents Binding of p120- and Beta-Catenin and Maintains the Cellular Mesenchymal State. *J. Biol. Chem.* 280: 31906-31912, 2005.
177. Weis, S.M., and Cheresh, D.A. Pathophysiological consequences of VEGF-induced vascular permeability. *Nature* 437: 497-504, 2005.
178. Stupack, D.G., Teitz, T., Potter, M., Mikolon, D., Houghton, P.J., Kidd, V.J., Lahti, J.M., Cheresh, D.A. Potentiation of neuroblastoma metastasis by loss of caspase 8. *Nature* 439:95-99, 2006.
179. Mitra, S.K., Mikolon, D., Molina, J.E., Hsia, D.A., Hanson, D.A., Chi, A., Lim, S-T, Bernard-Trifilop, J.A., Ilic, D., Stupack, D.G., Cheresh, D.A., and Schlaepfer, D.D. Intrinsic FAK activity & Y925 phosphorylation facilitate an angiogenic switch in tumors. *Oncogene* 25: 5969-5984, 2006.
180. Doukas, J., Wrasidlo, W., Noronha, G., Dneprovskaja, E., Fine, R., Weis, S., Hood, J., DeMaria, A., Soll, R., Cheresh, D.A. Phosphoinositide 3-kinase γ inhibition limits infarct size after myocardial ischemia/reperfusion injury. *Proc. Natl. Acad. Sci.* 103:19866-71, PMC1702529, 2006.
181. Weis, S.M., Lindquist, J.N., Barnes, L.A., Lutu-Fuga, K.M., Cui, J., Wood, M.R., Cheresh, D.A. Cooperation between VEGF and β 3 integrin during cardiac vascular development. *Blood* 109: 1962-1970, PMC1801042, 2007.
182. Alavi, A.S., Acevedo, L., Min, W., and Cheresh, D.A. Chemoresistance of endothelial cells induced by bFGF depends on Raf-1-mediated inhibition of the proapoptotic kinase, ASK1. *Cancer Res* 67: 2766-2772, 2007.
183. Luo, J.-L., Tan, W., Ricono, J.M., Korchynskyi, O., Zhang M., Gonias, S., Cheresh, D.A. and Karin, M. Nuclear cytokine activated IKK α controls prostate cancer metastasis by repressing Maspin. *Nature* 446: 690-694, 2007.
184. Yang, X-L., Kapoor, M., Otero, F.J., Slike, B. M., Tsuruta, H., Frausto, R., Bates, A., Ewalt, K.L., Cheresh, D.A. and Schimmel P. Gain-of-function mutational activation of human tRNA synthetase procytokine. *Chemistry & Biology* 14: 1323-1333, PMC2693404, 2007.
185. Cheresh, D.A. (Ed). (2007) *Methods in Enzymology*: Vol. 426, Integrins. San Diego, CA: Elsevier.
186. Acevedo, L.M., S. Barillas, S.M. Weis, J.R. Gothert, and D.A. Cheresh, Semaphorin 3A suppresses VEGF-mediated angiogenesis yet acts as a vascular permeability factor. *Blood* 111(5): 2674-2680, PMC2254547, 2008.
187. Weis, S.M., Lim, S.T., Lutu-Fuga, K.M., Barnes, L.A., Chen, X.L., Goëthert, J.R., Shen, T.L., Guan, J.L., Schlaepfer, D.D., and Cheresh, D.A. Compensatory role for Pyk2 during angiogenesis in adult mice lacking endothelial cell FAK. *J. Cell Biol.* 181(1): 43-50, PMC2287283, 2008.

188. Acevedo, L.M., Weis, S.M., and Cheresh, D.A. Robo4 counteracts VEGF signaling. *Nature Medicine* 14(4): 372-373, 2008.
189. Serban, D., Leng, J., and Cheresh, D.A. H-Ras regulates angiogenesis and vascular permeability by activation of distinct downstream effectors. *Circ. Res.* 102 (11): 1350-1358, PMC2743877, 2008.
190. Scheppek, L., Aguilar, E., Gariano, R.F., Jacobson, R., Hood, J., Doukas, J., Cao, J., Noronha, G., Yee, S., Weis, S., Martin, M.B., Soll, R., Cheresh, D.A., and Friedlander, M. Retinal vascular permeability suppression by topical application of a novel VEGFR2/Src kinase inhibitor in mice and rabbits. *J. Clin. Invest.* 118(6): 2337-2346, PMC2381746, 2008.
191. Murphy, E.A., Majeti, B.K., Barnes L., Makale, M., Weis, S.M., Wrasidlo, W., and Cheresh, D.A. Nanoparticle-mediated drug delivery to tumor vasculature suppresses metastasis. *Proc. Natl. Acad. Sci.* 105: 9343-9348, PMC2453735, 2008.
192. Alavi, A.S. and Cheresh, D.A. Integrins in Angiogenesis. In *Angiogenesis: An Integrative Approach from Science to Medicine* Figg W, Folkman J (Eds); Springer: New York, p.63-73, 2008.
193. Cheresh, D.A., Greenberg, J.I. Antiangiogenic Cancer Therapy. In *N Engl J Med* 359:545, July 31, 2008 Book Review.
194. Stockmann, C., Doedens, A., Weidemann, A., Zhang, N., Takeda, N., Greenberg, J.I., Cheresh, D.A. and Johnson, R.S. Deletion of vascular endothelial growth factor in myeloid cells accelerates tumorigenesis. *Nature* 456: 814-819, PMC3103772, 2008.
195. Greenberg, J.I., Shields, D.J., Barillas, S.G., Acevedo, L.M., Murphy, E., Huang, J., Scheppek, E., Stockmann, C., Johnson, R.S., Angle, N. and Cheresh, D.A. A role for VEGF as a negative regulator of pericyte function and vessel maturation. *Nature* 456: 809-813, PMC2605188, 2008.
196. Rupp, P.A., Visconti, R.P., Czirok, A., Cheresh, D.A. and Little, C.D. Matrix metalloproteinase 2-integrin $\alpha\beta 3$ binding is required for mesenchymal cell invasive activity-but not epithelial locomotion: a computational time-lapse study. *Mol. Biol. Cell* (12): 5529-5540, PMC2592652, 2008.
197. Cheresh, D.A. and Stupack, D.G. Regulation of angiogenesis: apoptotic cues from the ECM. *Oncogene* 27: 6285-6298, 2008.
198. Cheresh, D.A. (Ed). (2008) *Methods in Enzymology: Vol. 443, Angiogenesis: In Vitro Systems*. San Diego, CA: Elsevier.
199. Cheresh, D.A. (Ed). (2008) *Methods in Enzymology: Vol. 444, Angiogenesis: In Vivo Systems, Part A*. San Diego, CA: Elsevier.
200. Cheresh, D.A. (Ed). (2008) *Methods in Enzymology: Vol. 445, Angiogenesis: In Vivo Systems, Part B*. San Diego, CA: Elsevier.
201. Acevedo, L.M. and Cheresh, D.A. Suppressing NFAT increases VEGF signaling in hemangiomas. *Cancer Cell* 14(6): 429-430, 2008.
202. Doukas, J., Eide, L., Stebbins, K., Racanelli-Layton, A., Dellamary, L., Martin, M., Dneprovskaja, E., Noronha, G., Acevedo, L.M., Soll, R., Wrasidlo, W. and Cheresh, D.A. Aerosolized Phosphoinositide 3-Kinase γ/δ Inhibitor TG100-115 as a Therapeutic Candidate for Asthma and Chronic Obstructive Pulmonary Disease. *J. Pharmacol. Exp. Ther.* 328(3):758-765, 2009.
203. Ricono, J.M., Huang, M., Barnes, L.A., Lau, S.K., Weis, S.M., Schlaepfer, D.D., Hanks, S.K. and Cheresh, D.A. Specific crosstalk between EGFR and integrin $\alpha\beta 5$ promotes carcinoma cell invasion and metastasis. *Cancer Research* 69: (4); 1383-1391, PMC2741736, 2009.
204. Makale, M., McElroy, M., O'Brien, P., Hoffman, R., Guo, S., Bouvet, M., Barnes, L., Ingulli, E. & Cheresh, D.A. An extended-working-distance multiphoton micro-manipulation microscope for deep

penetration imaging in live mice and tissue. *J. of Biomed. Optics* Mar-Apr 14(2): 024032, PMC3098575, 2009.

205. Weis, S., Stupack, D.G. and Cheresh, D.A. Agonizing Integrin Antagonists? *Cancer Cell* 5(15): 359-61, 2009.
206. Koh, W., Sachidanandam, K., Stratman, A.N., Sacharidou, A., Mayo, A.M., Murphy, E.A., Cheresh, D.A. and Davis, G.E. Formation of endothelial lumens requires a coordinated PKC ϵ -, Src-, Pak- and Raf-kinase dependent signaling cascade downstream of Cdc42 activation. *J. of Cell Science* 122: 1812-1822, PMC2684834, 2009.
207. Desgrosellier, J.S., Barnes, L.A., Shields, D.J., Huang, M., Lau, S.K., Prévost, N., Tarin, D., Shattil, S.J. and Cheresh, D.A. Integrin $\alpha v \beta 3$ /c-src "Oncogenic Unit" Promotes Anchorage-independence and Tumor Progression. *Nature Medicine* 15:1163-1169, PMC2759406, 2009.
208. Greenberg, J.I. and Cheresh D.A. VEGF as an inhibitor of tumor vessel maturation: implications for cancer therapy. *Expert Opin. Biol. Ther.* Sept. 18, 2009.
209. Desgrosellier, J.S. and Cheresh, D.A. Integrins in Cancer: Biological Implications and Therapeutic Opportunities. *Nature Reviews Cancer* Jan. 9-22, 2010.
210. Shields, D.J., Niessen, S., Murphy, E.A., Mielgo, A., Desgrosellier, J.S., Lau, S.K., Barnes, L.A., Lesperance, J., Bouvet, M., Tarin, D., Cravatt, B.F., and Cheresh, D.A. RBBP9: A tumor-associated serine hydrolase activity required for pancreatic neoplasia. *Proc Natl Acad Sci U S A.* 107(5):2189-94, Feb 2, PMC2836678, 2010.
211. Murphy, E.A., Shields, D.J., Stoleto, K., Dneprovskaya, E., McElroy, M., Lindquist, J., Acevedo, L., Anand, S., Majeti, B.K., Tsigelny, I., Saldanha, A., Walsh, B., Hoffman, R.M., Bouvet, M., Klemke, R., Vogt, P.K., Arnold, L., Wrasidlo, W., and Cheresh, D.A. Disruption of angiogenesis and tumor growth with an orally active drug that stabilizes the inactive state of PDGFR β /B-RAF. *Proc Natl Acad Sci USA.* 107(9):4299-304, PMC2840076, 2010.
212. Lindquist J.N., Cheresh D.A., and Snyder E.Y. Derivation of vasculature from embryonic stem cells. *Curr Protoc Stem Cell Biol.* Chapter 1: Unit 1F.9, 2010.
213. Garmy-Susini B., Avraamides C.J., Schmid M.C., Foubert P., Ellies L.G., Barnes L., Feral C., Papayannopoulou T., Lowy A., Blair S.L., Cheresh D., Ginsberg M., and Varner J.A. Integrin $\alpha 4 \beta 1$ signaling is required for lymphoangiogenesis and tumor metastasis. *Cancer Res*; 70(8):3042-51, PMC2856096, 2010.
214. Anand, S., Majeti, B.K., Acevedo, L.M., Murphy, E.A., Mukthavaram, R., Schepke, L., Huang, M., Shields, D.J., Lindquist, J.N., Lapinski, P.E., King, P.D., Weis, S.M. and Cheresh, D. A. MicroRNA-132 mediated loss of p120RasGAP activates endothelium to facilitate pathological angiogenesis. *Nature Medicine* 16:909-14, PMC3094020, 2010.
215. Shields, D.J., Murphy, E.A., Desgrosellier, J.S., Mielgo, A., Lau, S.K.M., Barnes, L.A., Lesperance, J., Huang, M., Schmidt, C., Vogt, P.K., Tarin, D., Lowy, A.M., and Cheresh, D.A. Oncogenic Ras/Src cooperativity in pancreatic neoplasia. *Oncogene*; 30(18): 2123-2134. PMC3104672, 2011.
216. Anand, S. and Cheresh, D.A. MicroRNA-mediated regulation of the angiogenic switch. *Current Opinion in Hematology*; May 18(3):171-6, 2011.
217. Russell, R.C., Sufan, R.I., Zhou, B., Heir, P., Bunda, S., Sybingco, S.S., Greer, S.N., Roche, O., Heathcote, S.A., Chow, V.W.K., Boba, L.M., Richmond, T.D., Hickey, M.M., Barber, D.L., Cheresh, D.A., Simon, M.C., Irwin, M.S., Kim, W.Y. and Ohh, M. Loss of JAK2 regulation via a heterodimeric VHL-SOCS1 E3 ubiquitin ligase underlies Chuvash polycythemia. *Nature Medicine*, Jun 19, doi: 10.1038/nm. 2370, 2011.

218. Schmid, M., Avraamides, C.J., Dippold, H.C., Franco, I., Foubert, P., Ellies, L.G., Acevedo, L.M., Manglicmot, J.R., Song, X., Wrasidlo, W., Blair, S., Ginsberg, M.H., Cheresch, D.A., Hirsch, E., Field, S.J., and Varner, J.A. Receptor tyrosine kinases and TLR/IL1Rs unexpectedly activate myeloid cell PI3Ky, a single convergent point promoting tumor inflammation and progression. *Cancer Cell*, 19(6): p. 715-727, PMC2856096, 2011.
219. Murphy, E.A., Majeti, B.K., Mukthavaram, R., Acevedo, L.M., Barnes, L.A., and Cheresch, D.A. Targeted Nanogels: A Versatile Platform for Drug Delivery to Tumors. *Mol Cancer Ther*; Jun; 10(6):972-82. PMC3112300, 2011.
220. Aspinall, R.J., Weis, S.M., Barnes, L., Lutu-Fuga, K., Bylund, D.J., Pockros, P.J., and Cheresch, D.A. A Src family kinase inhibitor improves survival in experimental acute liver failure associated with elevated cerebral and circulating vascular endothelial growth factor levels. *Liver Int.* Jun 7; 1478-323, 2011.
221. Mielgo, A., Seguin, L., Huang, M., Camargo, M.F., Anand, S., Franovic, A., Weis, S.M., Advani, S.J., Murphy, E. and Cheresch, D.A. A MEK-independent role for CRAF in mitosis and tumor progression. *Nature Medicine*, 17(12):p. 1641-1645, 2011.
222. Huang, M., Anand, S., Murphy, E.A., Desgrosellier, J.S., Stupack, D.G., Shattil, S.J., Schlaepfer, D.D. and Cheresch D.A. EGFR-dependent pancreatic carcinoma cell metastasis via Rap1 activation. *Oncogene*, 2011 – in press.
223. Weis, S.M. & Cheresch, D.A. Tumor angiogenesis: molecular pathways and therapeutic targets. *Nature Medicine*, 17(11):1359-1370, 2011. (PMCID in process)
224. Chen, X.L., Nam, J.O., Jean, C., Lawson, C., Walsh, C., Goka, E., Lim, S.T., Tomar, A., Tanjoni, I., Uryu, S.A., Guan, J.L., Acevedo, L.M., Weis, S.M., Cheresch, D.A. & Schlaepfer, D.D. VEGF-induced vascular permeability is mediated by FAK. *Developmental Cell*, 2011 - in press.
225. Scheppke, L., Murphy, E.A., Zarpellon, A., Hofmann, J.J., Merkulova, A., Shields, D.J., Weis, S.M., Byzova, T.V., Ruggeri, Z.M., Iruela-Arispe, M.L. & Cheresch, D.A. Notch promotes vascular maturation by inducing integrin-mediated smooth muscle cell adhesion to the endothelial basement membrane. *Blood*, Epub Dec 01, 2011.